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**DRAFT RISK MANAGEMENT PLAN
HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA**

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ACRONYMS AND ABBREVIATIONS

ABM	Abrasive blast material
ADMP	Asbestos Dust Mitigation Plan
ARIC	Area requiring institutional controls
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Conservation and Development Commission
BMP	Best Management Practice
CCR	California Code of Regulations
City	City and County of San Francisco
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986
CHHSLs	California Human Health Screening Levels
CIH	Certified Industrial Hygienist
COC	Chemical of concern
CRUP	Covenants to Restrict Use of Property
CWA	Clean Water Act
DCP	Dust Control Plan
DTSC	California Department of Toxic Substance Control
EHSPs	Environmental Health and Safety Plans
FFA	Federal Facilities Agreement
GMP	Groundwater Management Plan
HPS	Hunters Point Shipyard
ICs	Institutional controls
LUC	Land use control
NAPL	Non-aqueous phase liquid

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOA	Naturally occurring asbestos
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and maintenance
OSHA	Occupational Safety and Health Administration
OVA	Organic vapor analyzer
OVM	Organic vapor monitor
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PPE	Personnel protective equipment
QSD	Qualified SWPPP Developer
RA	Remedial Action
RACR	Remedial Action Completion Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
ROD	Record of Decision
RMP	Risk Management Plan
RWQCB	Regional Water Quality Control Board
SASFRA	Successor Agency to the San Francisco Redevelopment Agency
SFDPH	San Francisco Department of Public Health
SFPUC	San Francisco Public Utilities Commission
SIP	Soil Importation Plan
SSHO	Site Safety and Health Officer
SVE	Soil vapor extraction

SVOCs	Semi-volatile organic compounds
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
TCRA	Time-critical removal action
TMSRA	Technical Memorandum in Support of a ROD Amendment
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USTs	Underground storage tanks
VOCs	Volatile organic compounds
WDRS	Water Discharge Requirements

1.0 INTRODUCTION

For the past several decades, the Navy has been conducting investigations, feasibility studies, removal actions, and remedial actions at the former Hunters Point Shipyard (HPS) in San Francisco, California. These activities have been conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), the Clean Water Act (CWA), and state-specific environmental programs under the supervision of the United States Environmental Protection Agency (USEPA), California Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB) as specified in a Federal Facilities Agreement (FFA) for HPS (Navy, 1991). The land at HPS is divided into Parcels, as depicted in Figure 1. As illustrated in Figure 1, this Risk Management Plan (RMP) applies to those Parcels where a) the remedy is in place and approved, b) the Parcel has been transferred out of federal ownership, and c) the use and activity restrictions require a RMP or similar document in order for land disturbing activities to occur. Figure 1 will be updated as future Parcels transfer out of federal ownership. A definition of terms used in this RMP is included in Appendix A.

In accordance with the final Records of Decision (RODs) for each Parcel, environmental cleanup activities were implemented by the U.S. Navy to provide for protection of human health and the environment. The Navy's required cleanup activities are specified in the RODs for each Parcel (see Appendix B for references). For those Parcels that have a remedy in place, the Navy has prepared a Land Use Control Remedial Design document (LUCRD) and an Operation and Maintenance (O&M) Plan, which specify requirements for all future land owners. In addition the FFA Signatories have issued a Covenant Restricting the Use of Property (CRUP), which specifies certain land use restrictions that run with the land in perpetuity.

This RMP has been prepared as specified in the Parcel-specific LUCRD documents to provide environmental procedures and protocols for Parcels that have been transferred from the Navy to the Successor Agency to the San Francisco Redevelopment Agency (SASFRA) and subsequent land owners. The Parcels subject to this RMP have a CERCLA remedy in place that must be managed in perpetuity by each land owner. In this regard, the RMP is intended to satisfy certain provisions of the Navy's LUCRD, O&M Plan, and the CRUP (see Appendix B for references).

The RMP is organized as follows:

- Section 2.0** Summary of Environmental Conditions: Provides a brief description of soil and groundwater conditions and identifies the remedies in place for each Parcel subject to this RMP.
- Section 3.0** Regulatory Agency Protocols: Describes restricted activities approved with conditions, restricted activities requiring notification and approval, description of the General Areas Requiring Institutional Controls (ARICs) and the ARIC for VOCs (VOC ARIC), and procedures to modify the RMP. This section also lists the public repository where information can be obtained.
- Section 4.0** Reporting and Notice Protocols: Describes reporting and notification process, including notification entities, activities requiring notification, completion report requirements and approvals, and annual reports.
- Section 5.0** Risk Management Procedures and Protocols during Soil Disturbing Activities: Presents risk management measures, which must be implemented during development where soil, sediment, and/or groundwater will be disturbed, and required operation and maintenance activities.
- Section 6.0** References: Lists references used in the preparation of this RMP.

1.1 RMP Scope

This RMP is an FFA signatory approved document (as required and defined in the LUCRDs) that allows otherwise restricted activities, referred to as Restricted Activities Authorized with Conditions (see Section 3.2.2), to be performed on land Parcels where: a) the remedy implementation phase is complete; b) the Regulatory Agencies have approved the Remedial Action Completion Report; c) the Regulatory Agencies have concurred on the Finding of Suitability to Transfer; and, d) the land has transferred from the Navy to the SASFRA. As of the date of this report, Parcels subject to this RMP are referred to as the Property and are depicted in Figure 1. As land Parcels transfer from the Navy to the SASFRA and those Parcels become subject to this RMP, Figure 1 in this RMP will be updated and will be made available in the Hunters Point Shipyard information repositories (see Section 3.4) and on the San Francisco Department of Public Health (SFDPH) Hunters Point Shipyard Redevelopment website (<http://www.sfdph.org/dph/EH/HuntersPoint/default.asp>). The RMP will be required as long as the LUCRD and CRUP are enforceable on the applicable land Parcels, regardless of land ownership.

This RMP was prepared solely for use within the General Area Requiring Institutional Controls (ARIC) and ARIC for Volatile Organic Compounds (VOC) for land Parcels that have transferred from the Navy to the SASFRA and is not intended to be applied for the management of risks within any area or project not otherwise explicitly identified in the RMP. Under this definition, this RMP is not required for and is not anticipated to be required for Parcel A, Parcel D-2, or the areas subject to radiological restrictions, which are currently anticipated to be a portion of the Installation Restoration (IR) Site 7/18 on Parcel B, the shoreline area of Parcel E, and the majority of Parcel E-2. Although this RMP sets forth the requirements to appropriately manage the potential risks in soil and groundwater following remedy completion, the RMP is not intended to catalog all other legal requirements that may apply to the property or to activities conducted under the RMP such as, but not limited to: worker health and safety as governed by the Occupational Safety and Health Administration (OSHA) and compliance with Article 31 of the San Francisco Health Code. Article 31 contains special permit processing requirements that apply at Hunters Point Shipyard to address potential constituents of concern in the soil and groundwater.

1.2 Intended Users of RMP

This RMP is intended for the following entities or their designees who may perform or oversee the Restricted Activities described in Section 3.1.2 within transferred land Parcels:

- The successor agency to the San Francisco Redevelopment Agency (SASFRA);
- Property Owners (see Appendix A definitions);
- Regulatory agencies (USEPA, DTSC, and RWQCB) and City and County of San Francisco Department of Public Health (SFDPH); and,
- Department of the Navy (Navy).

The RMP will be used by the Property Owners to ensure protection of the Navy's remedy and by regulatory agencies and the Navy to ensure that future Property Owners comply with the ROD-required land use restrictions to limit exposure to hazardous substances and ensure that Property Owners maintain the integrity of the remedy as required by the LUCRD, the Operation and Maintenance plans, and CRUP.

2.0 SUMMARY OF ENVIRONMENTAL CONDITIONS AND DESCRIPTION OF AREAS REQUIRING INSTITUTIONAL CONTROLS (ARICS)

NOTE to BCT - The content for this section will be pulled from each respective FOST as the parcels are ready for transfer and addition to this RMP. Suggested text is presented below for Parcel B.

This Section includes a brief description of the environmental condition and the remedies in place for the Property. A more comprehensive discussion of environmental conditions and the remedies in place is included in Appendix B.

2.1 Parcel B

The primary chemicals of concern (COCs) detected in soil at Parcel B that remain at levels that may pose a long term health risk include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals. COCs for Parcel B in groundwater in the A-aquifer that remain at levels that may pose a long term health risk include VOCs (mainly trichloroethene and its breakdown products), chromium VI, mercury, and nickel. COCs for Parcel B in soil gas that remain at levels that may pose a long term health risk include VOCs (mainly trichloroethene and its breakdown products). COCs for Parcel B in shoreline sediments that may pose a long term health risk to ecological organisms include metals, pesticides, PCBs, and polycyclic aromatic hydrocarbons (PAHs).

The portion of Parcel B subject to this RMP is identified in Figure 1 and in the CRUP and is subject to a General ARIC. Portions of the Parcel are also subject to the VOC ARIC. The remedial actions identified in the Amended ROD are listed in Appendix B. Components of the remedy that remain to ensure that human health and environment are protected from these long term health risks include:

- Durable covers over the entire Parcel to prevent contact with residual ubiquitous metals. A durable cover is defined in the Amended ROD, RD, and Remedial Action Work Plan (RAWP) as hardscape (e.g., asphalt, buildings, sidewalks, etc.) or a minimum of two feet of clean imported fill.
- Revetment wall along portions of the Parcel B shoreline to cover and prevent access to shoreline sediments on Parcel B.
- Groundwater monitoring program to verify that remediation efforts continue to meet the remediation goals defined in the Amended Parcel B ROD.

- Land use and activity restrictions to prevent or minimize exposure to contaminated soil, soil vapor, and groundwater.

The requirements for long-term monitoring and operation and maintenance (O&M) of these components are provided in the Parcel B O&M report (Chadux Tt, December 10, 2011a). These long term monitoring and O&M obligations are independent of the RMP; however, the annual O&M inspections will be conducted and submitted simultaneously with the RMP annual inspections as described in Section 4.0 and Appendix D. A more detailed description of the environmental conditions and remedial action in Parcel B is presented in Appendix B.

2.2 Parcel B, Portions of Sites IR7/18

Content concerning the free release areas of Sites IR7/18, similar to Parcel B above to be added.

2.3 Parcel G

Content to be added similar to Parcel B, above.

2.4 Parcels UC-1/ UC-2/UC-3

Content to be added similar to Parcel B, above.

(Note: Other parcels are anticipated to be added in future.)

3.0 RESTRICTED ACTIVITIES AND REGULATORY AGENCY PROTOCOLS

This section describes the restricted activities, regulatory oversight protocols, types of activities, associated restrictions that are governed by this RMP, and the process for modifying this RMP.

3.1 Restricted Activities

The approved remedy includes restricted activities that are defined in the ROD and further defined in the LUCRD specific to each Parcel on the Property. These restricted activities apply to all land that falls within the General ARIC, as defined in the LUCRD and CRUP. The purpose of this RMP is to allow otherwise restricted activities, referred to as Restricted Activities Authorized with Conditions (see Section 3.2.2), to be conducted. The entire list of restricted activities, as defined in the ROD and LUCRD, include the following:

- “Land disturbing activity” which includes, but is not limited to: (1) excavation of soil; (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind; (3) demolition or removal of “hardscape” (for example, concrete roadways, parking lots, foundations, asphalt, and sidewalks); (4) any activity that involves movement of soil to the surface from below the surface of the land; and (5) any other activity that causes or facilitates the movement of known contaminated groundwater.
- Alteration, disturbance, or removal of any component of a response or cleanup action (including, but not limited to, pump-and-treat facilities, soil vapor barriers, revetment walls and shoreline protection, and durable cover/containment systems); groundwater extraction, injection, and monitoring wells, and associated piping and equipment; or associated utilities.
- Extraction of groundwater and installation of new groundwater wells with the exception of construction, operation, and maintenance activities associated with responses or remedial actions as required or necessary under the CERCLA remedy.
- Removal of or damage to security features (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).

The RODs and the LUCRDs provide that the activity restrictions will be enforceable through the Parcel-specific CRUP and deed restrictions. CRUP(s) and deed restrictions will be recorded in the official

records of the City and County of San Francisco (City) against all Parcels that are subject to this RMP and run with the land under California Civil Code 1471.

Additionally, the RODs and LUCRDs list activity restrictions related to the potential exposure to volatile chemicals in the subsurface soil vapor (VOC ARIC). The restricted activities include construction of enclosed structures or alteration of the foundations of existing enclosed structures within a VOC ARIC. Risk to human health may exist from potential intrusion of VOC vapors into structures built on the Property. A reduction in this potential risk can be achieved through engineering controls or other design alternatives that meet the specifications that will be set forth in the Design Basis Reports (DBR) and Remedial Action Work Plan (RAWP) for each Parcel. The specifications include, but are not limited to DTSC's "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, Interim Final," dated December 15, 2004, revised on February 7, 2005, and finalized in October 2011 and the OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (EPA, 2002). The VOC ARIC will include those portions of Parcels designated in the deed and CRUP specific to each Parcel and referenced in Appendix B. Enclosed structures within the VOC ARIC shall not be occupied until the Owner has requested and obtained FFA signatory approval through approval of a Remedial Action Completion Report or similar document that documents any necessary engineering controls or design alternatives have been properly constructed and are operating successfully.

3.2 Regulatory Oversight

The regulatory agencies that have oversight and approval roles for various obligations are described in this section. The Federal Facility Agreement (FFA) is an agreement entered into by the regulatory agencies to carry out the remediation of HPS. As outlined in the FFA, the Navy acts as the lead agency for compliance with CERCLA, in consultation with the regulatory agencies. The regulatory agencies that have specific authority under the FFA include the USEPA, DTSC, and RWQCB. These agencies plus the Navy, as the lead agency under CERCLA, are collectively hereafter referred to as the (FFA) signatories. The FFA signatories and the City of San Francisco Department of Public Health (SFDPH) will be collectively hereafter referred to as the Oversight Agencies. The DTSC, RWQCB, USEPA, and the SFDPH will be collectively hereafter referred to as the Regulatory Agencies for the purposes of this RMP. The Navy will be referred to as the lead agency under CERCLA. A contact list is included in Appendix C.

Regulatory oversight regarding implementation of the RMP includes, but is not limited to:

- Review and approval of modifications to the RMP, as described in Section 3.4.
- Review and approval of work plans for conducting restricted activities requiring FFA signatory approval that are specified in Section 3.2.1 of this RMP.
- Performance of inspections to verify compliance with the RMP procedures and protocols.
- Review and approval of completion reports described in Section 4.2.3.
- Review and approval of activities involving unknown conditions, as described in Section 5.5 and Appendix I.

3.2.1 Restricted Activities Requiring FFA Signatory Approval

FFA Signatory Approval must be obtained in order to perform the following list of activities. This RMP does not provide the necessary approval for these activities. Specific restricted activities that affect the remedy and may not be commenced without first obtaining written FFA signatory approval include:

- “Land disturbing activity” in an area of known contaminated groundwater or that has the potential to cause or facilitates the movement of any known contaminated groundwater. Figures specific to each Parcel illustrating the areas of contaminated groundwater are included in Appendix B.
- Alteration, disturbance, or removal of any component of a response or cleanup action (including, but not limited to shoreline protection; groundwater pump-and-treat facilities, including groundwater extraction, injection, and monitoring wells and associated piping, equipment, and utilities; and soil vapor extraction and treatment systems, including soil vapor extraction wells, monitoring wells, and associated piping, equipment, and utilities.
- Alteration, disturbance, or replacement of the durable cover on contiguous land that is one acre in size or greater. However, construction of new road sections (street, curb, gutter, sidewalk, landscape median) for all areas, including contiguous areas one acre in size or greater can proceed, as long as the road section construction meets appropriate City building codes and standards and any disturbed soil is managed in accordance with Section 5 of this RMP.
- Extraction of groundwater and installation of new groundwater wells (including monitoring well replacement).

- Removal of or damage to security features (for example, locks on monitoring wells, survey monuments, fencing, signs, or monitoring equipment and associated pipelines and appurtenances).
- Engineering controls for enclosed structures within a VOC ARIC shall be approved by the FFA signatories through approval of a Remedial Action Completion Report or similar document that documents any necessary engineering controls or design alternatives have been properly constructed and are operating successfully.

3.2.2 Restricted Activities Authorized with Conditions

This RMP qualifies as FFA signatory approval for the following activities hereafter referred to as Restricted Activities Authorized with Conditions. These land disturbing activities are approved with the condition that such activities are performed in accordance with all provisions and protocols specified in the LUCRD, O&M Plan, and this RMP. Reporting requirements for the Restricted Activities Authorized with Conditions are further described in Section 4.0. Authorized activities include the following, except to the extent that the activities fall within one of the categories requiring FFA signatory approval under Section 3.2.1:

- Any activity occurring on land that is less than one acre in size (contiguous area) and involves movement of soil to the surface from below the surface of the land, or penetrates the cover remedy, including, but not limited to excavation, grading, or other movement of soil. Following completion of these activities, all soil that has been moved from below the cover remedy must either be hauled off-site or placed back in the excavation and the cover remedy re-installed. Excavated soil may be used at other locations on Hunters Point Shipyard so long as it is placed beneath an approved cover remedy (e.g., 2 feet of clean fill, asphalt cover, sidewalk, or street), as described further in Section 5.3.1.
- Construction of roads, utilities, surface/subsurface facilities that are connected to the utilities and related appurtenances as necessary to complete the redevelopment. Following the completion of any of these activities that penetrate the cover remedy, all excavated soil must be handled in accordance with the soil management protocols described in Section 5.3 and durable cover protocols in Section 5.2.

- Demolition or removal of “hardscape” (e.g., concrete or asphalt roadways, parking lots, building foundations, and sidewalks). Following completion of hardscape removal, an approved cover remedy must be re-installed, as described in Section 5.2.

Some specific examples of Restricted Activities Authorized with Conditions include, but are not limited to:

- Excavation of trenches, potholes, or other movement of soil from the subsurface to the surface in support of the installation of new below grade utilities, foundations, or other foundational structures (e.g., sewer lines, water lines, storm water pump station wet wells, pile caps and/or grade beams, fences, etc.). Following completion of these activities, all excavated soil must be handled in accordance with the soil management protocols described in Section 5.3 and durable cover protocols in Section 5.2.
- Demolition of existing below grade, at grade, or above grade structures. Following completion of demolition activities exposed native or existing soil must be covered with an approved cover remedy (e.g., 2 feet of clean fill, asphalt cover, sidewalk, or street) as specified in Section 5.2.
- Grading for the purpose of raising and/or lowering site grade, creation of building pads, fine grading activities in support of road installation, and associated excavating, loading, hauling, stockpiling and/or compacting soil. Following completion of these activities existing or Native Soils must be covered with an approved cover remedy (e.g., 2 feet of clean fill, asphalt cover, sidewalk, or street) as specified in Section 5.2.
- Pre-drilling for pile installation including drilling pilot holes through fill material prior to the installation of foundation piles. In addition, in areas where there is no known groundwater contamination and to the extent that such activities will not impact areas of known groundwater contamination; temporary dewatering activities may be conducted including temporary pumping of groundwater to dewater below grade excavations in support of both infrastructure installation and/or foundation installation, which may include both pumping of groundwater from an open excavation and/or pumping groundwater via perimeter temporary dewatering wells (typically used for building foundation installation). Additional information on groundwater management is provided in Section 5.7 and Appendix H.

Any entity performing the above Restricted Activities Authorized with Conditions will be required to comply with the following applicable soil and groundwater management protocols: a Dust Control Plan (DCP), a Stockpile Management Plan (part of the DCP), a Soil Importation Plan, a Storm Water Pollution Prevention Plan (SWPPP), and a Groundwater Management Plan (GMP), which shall be in

compliance with this RMP. Each of these elements is described in more detail in Section 5.0. In addition, entities performing Restricted Activities Authorized with Conditions will be required to comply with their own Environmental Health and Safety Plan (EHSP), which shall be in compliance with this RMP as specified in Section 5.1.

3.2.3 Areas Requiring Institutional Controls for Volatile Organic Compounds Vapors (VOC ARIC)

The criteria for determining the VOC ARIC was established by the Navy and presented in the Soil Vapor Intrusion Survey Report, (Sealaska, 2013). The Soil Vapor Intrusion Survey Report also established criteria for the modification or elimination of the VOC ARIC. The VOC ARIC for each Parcel is depicted in Appendix B. The VOC ARIC may be modified by the FFA signatories: i) as the soil or groundwater contamination areas that are producing unacceptable vapor inhalation risks are reduced over time; or, ii) in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the VOC ARIC do not pose an unacceptable potential exposure risk due to VOC vapors. If the data show that vapor inhalation risk is within the acceptable range specified in the ROD, ROD Amendment, Soil Vapor Intrusion Survey Report, Remedial Action Work Plan (RAWP), or other subsequent applicable document, the VOC ARIC may be modified by the FFA signatories and the appropriate figures in Appendix B will be updated accordingly.

In areas where the VOC ARIC remains, engineering controls shall be installed in buildings planned for human occupancy to mitigate potential vapor inhalation risk. When construction of enclosed structures or reuse of an existing building is proposed in a VOC ARIC the design of the vapor mitigation system must be approved by the FFA Signatories through approval of a Remedial Action Completion Report or similar document, which documents that necessary engineering controls or design alternatives have been properly constructed and are operating as designed.

3.2.4 Prohibited Activities

The following activities are prohibited throughout the Property:

- Growing vegetables, fruits, or any edible items in Native Soil for human consumption.
- Use of groundwater.

Plants for human consumption may be grown in the RMP Area if they are planted in raised beds (above the RACR-approved cover) containing non-native soil. Trees bearing edible fruit (including edible nut-

bearing trees) may also be planted provided that they are grown in containers with a bottom that prevents the roots from penetrating the Native Soil.

3.2.5 Compliance with Requirements of Public Agencies That Are Not Parties to the FFA

Compliance with this RMP is required in addition to all federal, state, and City permitting and environmental regulations and procedures for any construction or maintenance activity. The following is a list of state and local agencies that may have requirements for certain construction and maintenance activities, in addition to any requirements described in this RMP. This list is an example of potential state and local regulatory agencies and is not intended to be complete.

- Bay Area Air Quality Management District (BAAQMD) – air emissions and/or dust control for naturally occurring metals and naturally occurring asbestos, if applicable.
- Bay Conservation and Development Commission – approval of repairs or modifications to the revetment wall within 100 feet of the San Francisco Bay shoreline (as defined in Section 66610 of The McAtteer-Petris Act).
- City and County of San Francisco Department of Public Health (SFDPH) – monitoring well permitting, SFDPH Article 31 oversight, and SFDPH Article 22B.
- City and County of San Francisco Public Utilities Commission (SFPUC) – wastewater discharge permitting.
- Cal/Occupational Safety and Health Administration (OSHA) – worker health and safety.
- City and County of San Francisco, Oversight Board for the Office of Community Investment and Infrastructure – design review, CP/HPS Phase II Project.
- City and County of San Francisco Department of Building Inspection – building permitting.
- City and County of San Francisco Department of Public Works – permitting of structures in existing or future public right-of-ways and parks; subdivision approvals.
- City and County of San Francisco Municipal Transportation Agency – permitting of infrastructure related to transit and traffic management.

- City and County of San Francisco Fire Marshall – approval of infrastructure related to Fire Department emergency response.
- City and County of San Francisco, Successor Agency to the Redevelopment Agency – the intended recipient of the property.
- RWQCB - Clean Water Act Section 401 Water Quality Certification.
- US Army Corps of Engineers – approval of repairs or modifications to the revetment wall and storm drain outfalls below sea level.

3.3 Agency Site Access

The agencies responsible for enforcing the RMP procedures and protocols within the Property (Oversight Agencies) may elect to visit the site, as needed, per the rights of access described in the deed(s) and access requirements in the CRUP(s). The purposes of such visits include, but are not limited to confirming that the RMP procedures and protocols are being properly implemented.

3.4 Modifications to the RMP

Modifications to the RMP may become necessary to address unanticipated future events, such as newly-identified COCs for which site-specific remediation goals have not been calculated, or in the event of a remedy failure. Additionally, based on the progress of remedial activities, modification or termination of specific conditions or controls stated in this RMP may be warranted.

The FFA signatories will review the proposed changes, request any additional background information if needed, and issue a decision regarding the proposal within 45 (calendar) days of receiving the proposal and any additional requested information. Once approved, the modified RMP will be filed in the public repository (Section 3.4).

The FFA signatories may also propose modifications to the RMP based on new information that the RMP must address for the remedy to remain protective of human health and the environment. If the proposed modifications are not agreed upon by the FFA signatories, in consultation with the SFDPH, within 60 days, the RMP shall continue in its original form until the FFA signatories come to a consensus on the appropriate modifications and notify the SFDPH of the modifications.

Changes in notification personnel are not considered a modification to the RMP and do not require FFA signatory approval.

3.5 Public Repository of RMP

A copy of this RMP and any RMP modifications will be available at the HPS information repositories indicated below, and on the San Francisco Department of Public Health (SFPDH) Hunters Point Shipyard Redevelopment website (<http://www.sfdph.org/dph/EH/HuntersPoint/default.asp>). The Hunters Point Shipyard information repositories also contain the documents discussed in Section 2.0 and elsewhere in this RMP.

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, California 94102
Phone: 415-557-4500

Anna E. Waden Bayview Library
5075 Third Street
San Francisco, California 94124
Phone: 415-355-5757

Contact information for the FFA signatories is provided in Appendix C. Changes in contact information will be submitted to the SFPDH, which will be responsible for including the updated information on their SFPDH Hunters Point Shipyard Redevelopment website.

4.0 REPORTING AND NOTICE PROTOCOLS

This section describes reporting and notification protocols that apply when the following circumstances arise:

- Annual Reporting of Restricted Activities Authorized with Conditions in accordance with this RMP.
- Upon preparation of a work plan proposing to conduct Restricted Activities Requiring FFA signatory approval (Section 3.2.1) and upon receipt of results of implementing the work plan.
- Upon discovery of previously-unknown environmental conditions.

Notifications are the responsibility of the Owners. The relevant time periods for notifications and associated responsible entities are described below. Government entities with oversight responsibilities for certain aspects of the RMP but that are not one of the FFA Signatories are presented in Table 1.

4.1 Reporting for Restricted Activities Authorized with Conditions

An Annual Inspection Report, as described in Section 4.4, is required for the Property. The Annual Inspection Report shall include an accounting of the Restricted Activities Authorized with Conditions that occurred during the reporting period. Restricted Activities Authorized with Conditions are listed in Section 3.2.2. If unknown areas of contamination or changes in the understanding of environmental conditions are discovered during the course of conducting Restricted Activities Authorized with Conditions, the Owner shall notify the FFA signatories via the notification process described in Section 4.3 and will follow the procedures presented in the Unknown Condition Response Plan (Section 5.5 and Appendix I).

4.2 Restricted Activities Which Require FFA Signatory Approval

These sections describe notification and reporting requirements for the restricted activities listed in Section 3.2.1.

4.2.1 Obtaining Approval for Restricted Activities Which Require FFA Signatory Approval

The Owner shall notify the FFA signatories at least 60 calendar days prior to issuing any plan to conduct Restricted Activities Requiring FFA signatory approval. Notification shall be in the form of a proposed work plan detailing the specific activities to be conducted and the controls to be implemented to maintain the integrity of the remedy and protect human health and the environment. The FFA signatories shall

review and either approve or provide comments indicating deficiencies in the work plan within 30 calendar days of receipt of the work plan. If necessary, the EPA may request a meeting to review the work plan and to discuss resolution to significant comments. The FFA signatories may also request an extension of the review period prior to the end of the 30 calendar day time period. The Owner and FFA signatories shall work collaboratively to resolve work plan issues in a timely manner. The Owner shall obtain written approval of work plans prior to commencement of field activities. Following completion of the restricted activities, the affected portions of the remedy will be restored as described in Section 5.0.

4.2.2 Information Required for Proposed Activities Requiring FFA Signatory Approval

When the Owner prepares a notification package or proposed work plan to request approval to perform restricted activities requiring FFA signatory approval, the following should be included:

- Description of current site conditions.
- A description of the proposed activity or condition that warranted the activity, together with appropriate exhibits to illustrate the location and/or issue that is the subject of the notification.
- Work plans, including an implementation schedule, prepared to perform activities and restore the remedy following completion of the activities.

4.2.3 Completion Reports for Restricted Activities which Required FFA Signatory Approval

Following completion of the activity requiring FFA signatory approval, the Owner shall prepare a completion report for submittal to the FFA signatories. One of the purposes of the completion reports is to document the activity and, if necessary, any corrective actions implemented in the event the restricted activity had unforeseen impact. A completion report shall include the following components, as appropriate:

- A description of the activity or condition that triggered the notification, together with appropriate exhibits to illustrate the location and/or issue that is the subject of the notification.
- Description of notification protocols followed, including approval from the FFA signatories.
- References to work plans prepared to perform activities.
- Description of activities performed.

- Boring logs/well completion diagrams.
- Laboratory analytical reports.
- Waste disposal manifests.
- Description of final site conditions and/or as-built drawings.
- Verification that all activities were conducted in conformance with the requirements of this RMP (signed by a California licensed Professional licensed in the technical area representative of the work).
- A long-term maintenance and monitoring plan for any permanent facilities.
- Other appropriate documentation or components as specified as a condition of undertaking the subject activity and/or required by the FFA signatories.

The Owner shall submit completion reports to the FFA signatories within 45 days of completing the restricted activities that required FFA signatory approval.

The FFA signatories will review all completion reports to confirm that the actions taken are consistent with the RMP procedures and protocols and if applicable, the ROD and Remedial Design Package reports. Within 30 calendar days of completing review of the completion report, the FFA signatories will notify the Owners of any discrepancies or deficiencies in the completion report regarding compliance with this RMP, and the authors and regulators will work collaboratively to resolve such issues.

Upon concluding that the actions taken are consistent with the RMP and if applicable Remedial Action Objectives (RAOs) identified in the ROD are attained, the FFA signatories will issue an approval letter for the completion report.

4.3 Notification Requirements for Changes in Environmental Conditions or Discovery of Unknown Conditions

In the event that unexpected or previously unknown conditions are encountered in the field, the Owner shall notify the FFA Signatories as soon as practicable and in accordance with any legal notification requirements, but no later than two (2) days following the time at which the event became known to the Owner. Additionally, upon discovery of unexpected or previously unknown conditions, the Owner must temporarily halt work and determine: i) whether the condition is a mitigating condition (archeological, anthropological, paleontological, or biological/endangered species) or a CERCLA Condition (defined in Appendix I; and, ii) whether an appropriate path forward exists so that work can continue safely and in

accordance with applicable regulatory protocol. These determinations will be made in accordance with the EHSP and the Unknown Condition Response Plan (Section 5.5 and Appendix I) and as required under Article 31 of the San Francisco Health Code, and in accordance with any additional characterization deemed warranted.

4.4 Annual Inspection Reports

An Annual Inspection Report is required to be submitted by the Owner. The Annual Inspection Report Template in Appendix D includes forms that can be used by the Owner to report on the RMP Restricted Activities Authorized with Conditions and Restricted Activities Requiring FFA Signatory Approval that have been conducted over the previous year. The Owner's submittal of the forms in Appendix D, with any additional explanation as required, will comply with the annual inspection and reporting obligations of this RMP.

In addition, as described in each Parcel-specific LUCRD and CRUP, the Owner is required to conduct annual inspections, produce an Annual Inspection Report and submit an annual IC Compliance Monitoring Report and Annual IC Compliance Certificate as outlined in the following paragraphs. The reference to the Annual Inspection Report in these paragraphs is the same report as referenced in the paragraph above. Therefore submittal of the RMP Annual Inspection Report using the Appendix D template forms will satisfy the RMP and the LUCRD and CRUP requirements for submittal of an Annual Inspection Report. In addition to the Annual Inspection Report, the IC Compliance Monitoring Report and Annual IC Compliance Certificate will also have to be submitted as described in the following paragraphs and the LUCRD and CRUP.

Note to BCT: the following four paragraphs are copied directly from the draft Parcel B CRUP with modifications as necessary (e.g. references to exhibits in CRUP are removed when not applicable) The paragraphs on payment of DTSC costs and conveyance to a subsequent Owner are not included because they belong in the CRUP not the RMP. These words in these paragraphs should be modified if CRUP language is changed.

Each Owner shall conduct annual site inspections of the Owner's portion of the Property and provide to the Inspection and Enforcement Entity, through an electronic submittal process designated by the Inspection and Enforcement Entity (as that term is defined in the CRUP), an annual IC Compliance Monitoring Report and Annual IC Compliance Certificate for the Property or the Owner's portion of the Property. The IC Compliance Monitoring Report and Annual IC Compliance Certificate prepared by the

Owner shall include the results of the Owner's annual inspection and the Owner's self-certification of compliance with the LUCRD and RMP.

The Inspection and Enforcement Entity will conduct an annual inspection of all land Parcels subject to this RMP and provide to the FFA signatories a compilation of the Owners' annual IC Compliance Monitoring Report and Annual IC Compliance Certificates unless and until all ICs are terminated at the site.

Should the Owner discover any actions inconsistent with selected Restrictions at any time, including during the Owner's annual site inspection, the Owner shall prepare a written explanation indicating the specific actions inconsistent with selected Restrictions found and what efforts or measures the Owner has taken or will take to correct those actions. The Owner shall provide the written explanation to the Inspection and Enforcement Entity within ten (10) working days of the Owner's discovery. The FFA Signatories will be sent a carbon copy of this written explanation. The Inspection and Enforcement Entity will compile these Owners' explanations and submit them as part of the annual report to the FFA signatories.

The Owner is ultimately responsible for the annual inspection and reporting requirements and incident reporting that is outside of the annual inspection process, and shall work with the Inspection and Enforcement Entity, and the FFA Signatories, to correct the problem(s) discovered and cooperate with the Inspection and Enforcement Entity in the Inspection and Enforcement Entity's performance of its inspection and enforcement responsibilities.

4.5 Notification of Owners and Lessees

By the terms of restrictions in the recorded deeds and CRUPs and by this RMP, Owners shall provide a copy of the RMP to any party with the legal right to perform subsurface work on the property, which may include lessees, permittees, tenants, future transferees. However, the Owner remains responsible for compliance with all aspects of the LUCRD, CRUP, and this RMP.

5.0 RISK MANAGEMENT PROCEDURES AND PROTOCOLS DURING LAND DISTURBING ACTIVITIES

The purpose of this section is to describe risk management measures that will be implemented during land disturbing activities to ensure the integrity of implemented remedies during and following completion of construction. Activities that are subject to these measures include Restricted Activities Authorized with Conditions, restricted activities requiring FFA signatory approval, and operation, monitoring, and maintenance that are conducted in accordance with the approved O&M Plan. This section describes the specific protocol that will be implemented to maintain the integrity of the remedy and to control potential impacts to human health and the environment associated with potential exposure to COCs that might be present in soil, soil vapor, and/or groundwater encountered during land disturbing activities, including construction associated with development and future maintenance that are conducted after the remedy has been put in place. All protocol and activities conducted on the Property must comply with CERCLA as documented in the CERCLA decision documents referenced throughout this RMP. Where the specified protocol and activities addressed in this RMP are in conflict with those specified in the CERCLA decision documents, the CERCLA documents will prevail.

5.1 Construction Worker Health and Safety

Construction and maintenance contractors, whose workers may contact potentially contaminated soil, soil vapor, or groundwater within the Property, are required to prepare site-specific EHSPs under the direction of a Certified Industrial Hygienist (CIH) and in a manner consistent with applicable occupational health and safety standards, including, but not limited to OSHA 1910.120. The contractor-specific EHSPs will be maintained by the contractor at the site.

An EHSP is required for contractors engaged in any Restricted Activity-related work, including those listed in Section 5.0, that would extend below the ground surface and into Native Soil, except for grading in landscaped areas within or above the durable cover that consists of a minimum of 2 feet of clean fill (i.e., soil cover that does not contain Native Soil). Disturbance of the soil cover must follow the RMP requirements including the DCP and, if applicable, the Soil Importation Plan. Nothing in this section is intended to relieve any person, including contractors or employers, of other mandated worker health and safety planning and training requirements under any federal, state, or local statute or regulations.

It is the responsibility of the contractor preparing their EHSP to review information available in the Hunters Point Shipyard information repositories (see Section 3.4) regarding site conditions and potential health and safety concerns. It is also the responsibility of the contractor or other person preparing an

EHSP to verify that the components of the EHSP are consistent with applicable Cal/OSHA occupational health and safety standards and currently available toxicological information for potential COCs at the work site. Contractor compliance with the RMP obligations will be specified in the contract documentation for the contractors performing subsurface work. Each contractor must require its employees who may directly contact potentially contaminated site soil or groundwater to perform all activities in accordance with the contractor's EHSP. Each construction contractor will assure that its onsite construction workers will have the appropriate level of health and safety training, site-specific training, and will use the appropriate level of personal protective equipment as determined in the relevant EHSP based upon the evaluated job hazards and monitoring results. An example EHSP outline is included in Appendix E.

5.2 Durable Cover Protocols: Hardscape and Landscaped Areas

This Section presents protocols to be followed when temporarily removing and then replacing the durable cover during site redevelopment activities. At the time of transfer of the Property, the Navy will have installed durable covers of several types. Existing concrete building foundations and existing viable asphalt covers (e.g., existing roads and paved parking areas) will comprise a significant portion of the durable cover. Remaining areas, due to slope/topographic or access constraints, will have a minimum of 2 feet of clean fill installed, which will serve as the durable cover. Certain shoreline areas within Parcel B will have a rock revetment installed.

Following completion of any maintenance or repair work, which includes disturbance of any durable cover (hardscape or landscape), the integrity of the previously existing durable cover will be re-established in accordance with the protocols described in the O&M Plan. The O&M Plan describes procedures for the inspection, maintenance, and repair of durable covers. A completion report confirming completion of the reportable activities and replacement of a durable cover will be submitted to the entities previously notified in accordance with the protocols described in Section 4.2.3.

On occasion routine maintenance may be necessary in landscaped areas (e.g., irrigation installation or repair) within the soil cover, the 2 feet of clean imported fill material that is the durable cover remedy in that landscaped area. When digging in landscaped areas, workers will segregate any removed soil cover material from Native Soil. Disturbance of the soil cover must follow the RMP requirements including the DCP and, if applicable, the Soil Importation Plan. When routine maintenance is complete, workers must document that the soil cover was replaced with either the clean segregated soil or with 2 feet of imported clean soil that meets soil importation requirements. Documentation is to include photographs of the work, measured cover thickness and/or elevation survey, and a statement signed by the person(s)

performing the maintenance activities that the work was completed as per these instructions; this documentation will be attached onto the RMP annual inspection form and submitted to the Inspection and Enforcement entity.

It is the responsibility of each Owner to provide anyone working on the Property with a copy of this RMP prior to them performing any subsurface maintenance or repair activities and to ensure compliance with the RMP. Under the circumstances described in Section 4.4, the Inspection and Enforcement Entity will verify that these conditions are being met.

5.3 Soil Management Protocols

Native Soil within the boundaries of the Property may be moved within the Property and soil from Parcel A may be moved from Parcel A onto the Property without prior FFA signatory approval if and only if such soil will be placed underneath the required durable cover. For activities requiring FFA signatory approval defined in Section 3.2.1, soil reuse must be addressed, as necessary, as part of the submitted work plan. In the event that placement underneath the required durable cover is not accomplished immediately upon removal, such soil is to be stockpiled within the Property, with adequate protection, as further described in Section 5.3.2

5.3.1 Movement of Soil

Native Soil may be handled and moved from one portion of the Property to another location within each and between each portion of the Property and soil from Parcel A may be moved from Parcel A onto the Property, managed and reused without need for sampling, provided that reuse is conducted in accordance with the soil management practices described in this RMP and that no unknown or unexpected conditions are encountered. Soil with COC concentrations above ROD cleanup goals or Petroleum Program Strategy Goals may not be reused without agency approval. Unknown conditions would include the discovery of any contamination or subsurface object that was not previously identified on the Property (i.e., current understanding of environmental conditions). Unknown conditions and the protocols to follow if they are encountered are described in Section 5.5.

Native Soil that is excavated and remains within the Property and any soil moved from Parcel A to the Property must ultimately be covered by a durable cover, such as buildings or other hardscape such as streets, sidewalks, parking lots, and roads or by clean fill and landscaping in accordance with the durable cover requirements specified in the RODs and the RD Package reports.

Trucks used to transport solid bulk material that have the potential to cause visible dust emissions will be loaded in a manner to provide at least 1 foot of freeboard. When transported within HPS, the soil will either be covered with a tarp, or the materials will be sufficiently wetted. Unpaved haul routes will be wetted and trucks will not exceed speeds of 15 miles per hour. When transported off-site, the exposed soil in the truck will be covered with a tarp. Potential impacts from dust associated with the handling and movement of soil, soil compaction, soil stockpiling, etc., will be addressed through the implementation of the Dust Control Plan, included in Appendix F.

5.3.2 Soil Stockpile Management Protocols

Stockpiling of excavated soils may be necessary on a temporary basis to support the logistical phasing of the redevelopment activities. Whenever possible, soil stockpiles will be located in close proximity to the work area or the ultimate disposition area as practicable within the Property. Occasionally, it may be necessary to temporarily place soil stockpiles outside the Property. When such occasion occurs, the Owner will request permission from the Navy to place soil stockpiles in areas that are still owned by the Navy.

Stockpiles will be managed in compliance with storm water runoff and dust control requirements. Storm water runoff requirements will be specified in a project-specific Storm Water Pollution Prevention Plan (SWPPP). The project specific SWPPP will be generated for each project involving earth disturbing activity and is incorporated herein by reference. The Dust Control Plan that will apply to all work is summarized in Section 5.3.3 and the detailed plan is included in Appendix F. In general, stockpiles must be covered with a tarp, wetted, sloped, or controlled via appropriate means and methods as specified in the Dust Control Plan (Appendix F). Best management practices (BMPs) for erosion and sediment control will be implemented, as specified in the SWPPP, during construction activities. BMPs may include diversion of drainage from the stockpiles, installation of silt fencing/straw bale filter barriers on the down gradient toe of the stockpile slope, and dust control. Stockpiles will be under control of the Owner at all times and inspected at least weekly to ensure dust control and runoff control measures are functioning adequately and as specified in the appropriate plans.

5.3.3 Dust Control Plan

A DCP identifies the measures that will be taken to reduce particulate emissions during demolition of existing structures, grading, soil handling and stockpiling, vehicle loading, utility work, truck traffic and construction of site infrastructure. The DCP has been prepared in accordance with the requirements in Article 31 of the San Francisco Health Code and certain Bay Area Air Quality Management District

(BAAQMD) regulations often applicable to redevelopment activities. Exposure of onsite construction workers to dust containing COCs will be minimized, and generation of nuisance dust will also be minimized to comply with Article 22B of the San Francisco Health Code and SFDPH requirements prohibiting visible dust on San Francisco construction sites. The DCP is attached as Appendix F.

General dust control measures that may be used at the site include, but are not limited to, watering unpaved haul routes, restricting vehicle speeds to 15 miles per hour, wetting and/or covering stockpiles with tarps, wetting down excavation areas, reducing the height from which excavated soil is dropped, use of dust palliatives in inactive disturbed areas, implementation of erosion control measures, construction of gravel access pads in the temporary stockpile locations, installation of gravel pads or wheel wash stations at all egress points to prevent tracking of soil onto paved roads, and periodic sweeping of paved roads within the construction site with wet sweepers.

During windy conditions the use of wind breaks may be employed to control fugitive dust emissions. Under periods of sustained strong wind conditions (hourly average wind speeds of 25 miles per hour or greater), all clearing, grading, earthmoving, and excavating will be halted.

Naturally occurring asbestos (NOA) has been found in the serpentine bedrock and soil throughout the Hunters Point area. Large construction projects occurring within these areas are subject to the California Air Resources Board Airborne Toxic Control Measures (ATCM). For projects where surface soil will be disturbed in an area of one acre or larger, an Asbestos Dust Mitigation Plan (ADMP) will be submitted to and approved by the BAAQMD, as required. For projects less than one acre, an evaluation will be performed to determine whether an ATCM-compliant asbestos dust mitigation plan is required prior to initiation of potential dust generating activities.

5.4 Off-site Disposal of Soil and Wastes

Soil excavations will be required during construction of utility trenches, building foundations, and other facilities. It is likely that excavated soil will be reused within the Property for grading activities. As a result, off-site soil disposal should be limited. Any off-site soil disposal is subject to all applicable federal and state laws and regulations. All activities associated with waste disposal, such as truck loading, truck traffic, and decontamination of trucks leaving the facility will be performed in accordance with the Dust Control Plan provided in Appendix F (and summarized below) and any other applicable federal or state law or regulation.

As detailed in the DCP, any trucks used to transport solid bulk material that have the potential to cause visible emissions will be required to use a tarp cover (or equivalent), and the materials will be sufficiently

wetted during the loading process to avoid dust generation. Fully loaded trucks must have a minimum of one foot of freeboard. Trucks loaded with loose soil or sand will be covered before they leave HPS.

Vehicles will be checked to ensure that they are covered with a tarp and any excess material is removed from the bumpers, fenders, or other exterior surfaces of the cargo compartment where soil could collect. All off-site haul trucks will access the sites via paved access roads and established gravel pads. Every off-site haul truck will proceed through the decontamination gravel pad/tire cleaning area prior to departure. Site personnel will be stationed at the access/egress point to monitor inflow/outflow to and from the site. They will be responsible for inspecting all vehicles exiting and performing any necessary cleaning to help prevent track out.

The contractor is responsible for characterization of any waste prior to transportation and off-site disposal. Characterization for disposal shall be in accordance with the requirements of Title 22 of the California Code of Regulations, Division 4.5, Chapter 11 and the requirements of the disposal facility and any other applicable law. Labeling requirements for transportation of waste shall additionally be in accordance with Title 29 of the Code of Federal Regulations, Parts 172 and 173 and any other applicable law.

All soil to be disposed will be taken only to a certified and permitted California landfill or an equivalent out-of-state landfill, as appropriate and as determined by the waste profile.

5.5 Unknown Conditions

The potential exists for encountering unknown conditions within the Property. Unknown conditions may include unanticipated soil contamination, the presence of abrasive blast material (ABM), unexpected subsurface structures, buried pipelines, radiological devices, or other visual or olfactory evidence of a release. As part of the site-specific health and safety training that will be required of equipment operators and site workers, instruction will be given on how to identify potential unexpected conditions.

Upon discovery of unexpected or previously unknown conditions, the Owner must determine whether the condition is a mitigating condition (archeological, anthropological, paleontological, or biological/endangered species) or a Navy Condition (defined in Appendix I to include military munitions; chemical, biological, or radiological warfare agents; and radiological materials) and whether an appropriate path forward exists so that work can continue safely and in accordance with applicable regulatory protocol. These determinations will be made in accordance with the EHSP and the Unknown Condition Response Plan (Appendix I) and as required under Article 31 of the San Francisco Health Code, and in accordance with any additional characterization deemed warranted.

In accordance with the site-specific EHSP, appropriate measures will be undertaken to ensure worker safety in areas where unknown conditions are encountered. The SSHO will be responsible for evaluating any change in site conditions. The SSHO may stop work to determine if the level of site security and personnel protective equipment is adequate. Additional measures may include conducting contingency monitoring by taking organic vapor readings using an organic vapor monitor (OVM) or an organic vapor analyzer (OVA). If warranted, the area in which unknown conditions were encountered will be secured with barricades or fencing, as appropriate, and signage to prevent unauthorized access to the area.

5.5.1 Olfactory or Visual Evidence of Contamination

Site development activities may result in the identification of previously unidentified areas or types of contamination. Olfactory or visual evidence of contamination that would trigger the use of the Unknown Condition Response Plan as discussed in Section 4.3 include, but are not limited to:

- Oily, shiny, or oil saturated soil with free-phase petroleum product;
- Soil with a significant chemical or hydrocarbon-like odor;
- Significantly stained or colored soil that reasonably indicates a potential contaminant source;
- Groundwater odor, sheen or free-phase globules; or,
- Any other indication that contamination may exist that would trigger notification protocols.

5.5.2 Abrasive Blast Material (ABM)

ABM is generally a non-cohesive, granular material and typically may have a characteristic green or black color. Granulated ABM made by all manufacturers is chemically inert; therefore, it does not have hazardous waste characteristics of flammability, corrosivity, or reactivity. Due to the use of ABM on ships with lead-based paint, elevated levels of lead and other metals may be found in used ABM. Anecdotal evidence suggests that ABM may have been used at HPS as bedding aggregate or backfill material (e.g., for pipelines, former fill areas, roadways, and driveways).

As part of the site-specific health and safety training that will be required of equipment operators and site workers, instruction will be given on how to identify potential ABM. Because storm and sewer drains were removed by the Navy from the RMP area and these drains are the most likely areas in which ABM may have been placed there are no other areas that can be considered more likely than others to contain ABM. As a result, screening for ABM will initially rely on visual identification.

If ABM is found the Navy will be notified and will screen the suspect ABM for the presence of radionuclides and metals. If radionuclides above the remedial goals are detected the ABM will be handled appropriately by the Navy; otherwise, all ABM identified will be dealt with by the Owner. If the ABM contains radionuclides, or metals that are above the remedial goals set forth in the Parcel-specific ROD, the ABM will be handled as per the Unknown Condition Response Plan (Appendix I), will be disposed of off-site, and will be subject to the requirements of applicable federal, state, and local laws.

5.5.3 Subsurface Structures

During the course of excavation and construction activities within the Property, it is possible that USTs, sumps, barrels, drums, or other containers or other underground structures that were not discovered during previous site investigations could be discovered. For example, USTs may be identified during grading and site excavation activities by the presence of vent pipes, product distribution piping that leads to the UST, fill pipes, backfill materials, and the UST itself. Other structures might not have any features that extend above the surface and could be unearthed when construction equipment comes into contact with them. If an unexpected subsurface structure is encountered, notification and health and safety procedures will be invoked as discussed in Sections 4.0 and 5.1 and work will proceed in accordance with the Unknown Condition Response Plan, the Dust Control Plan, and as required under Article 31 of the San Francisco Health Code.

5.6 Soil Import Criteria

All soil imported from areas outside HPS, with the exception of soil imported from Parcel A, will be subject to sampling and soil quality controls established in a soil importation plan (SIP). A SIP outline is included as Appendix G; the SIP will include reference to the DTSC's October 2001 Clean Imported Fill Material Information Advisory soil quality parameters for imported soil, which are consistent with the ROD remediation goals and the Petroleum Program Strategy Goals. Soil import criteria will meet the most recent California Human Health Screening Levels (CHHSLs) for residential soils. Soil that meets CHHSLs or background levels and is approved for import under a SIP will be suitable for use as a durable cover as long as it meets all RD and RAWP requirements.

5.7 Groundwater Management Protocols

As described in Section 2.2, localized areas of groundwater contamination may have been identified within the Property. At the time of implementation of the RMP, the most recent groundwater monitoring data available will be evaluated by the Owner or their designee, who is a registered professional, prior to the initiation of the Restricted Activity in the context of the EHSP to identify areas where groundwater

contamination may be present and to determine the appropriate protective measures to address worker safety and prevent the movement of any residual groundwater contamination.

This section describes protocols to follow during performance of the Restricted Activities (Restricted Activities Authorized with Conditions and those requiring FFA signatory approval) as described in Section 3.2.2 in order to minimize worker exposure to contaminated groundwater and in an attempt to prevent the potential for affecting contaminated groundwater. All activities discussed below will require notification and completion reporting in accordance with the protocols described in Section 4.0.

5.7.1 Temporary Dewatering Activities

Current development plans include utility trenches and below grade parking lots to support the installation of utilities, construction of parks, and residential and commercial development. Due to the depth of these proposed excavations, temporary construction dewatering may be necessary. A plan to manage the groundwater during construction activities (Groundwater Management Plan [GMP]) will be prepared by each Owner executing the construction effort. A draft GMP will be submitted to the Oversight Agencies for review and approval. A Groundwater Management Plan outline is provided in Appendix H.

If it is determined via the procedure outlined in the GMP that construction necessitates the use of temporary dewatering, and the dewatering activities may occur in or around an area of known groundwater contamination, the regulatory agencies will be notified in accordance with Section 3.2.1. With that notification, a work plan discussing the dewatering scope and activities will be submitted for FFA signatory review and approval. As a general guide, the following risk management protocols will be included in the work plan:

- Conduct preliminary estimates of the amount of water that will need to be removed and the duration of pumping for the specific construction activity.
- Review of available groundwater monitoring data to evaluate groundwater quality in the vicinity of the planned dewatering activities.
- Based on the location of the proposed dewatering, a Professional Engineer or Geologist licensed in the State of California will evaluate whether the volume of water that would need to be removed would result in the enlargement of an existing groundwater plume or significant alterations in the groundwater flow patterns.

- If the volume estimates, duration estimates, and location of the groundwater dewatering suggest that such activities are not likely to result in the enlargement of a groundwater plume or significant alterations in flow patterns, then simple dewatering methods, such as those employed through the use of a sump pump, may be proposed to prevent groundwater from accumulating in an open excavation.
- If, based on the results of analysis, dewatering may result in enlargement of an existing groundwater plume, or result in significant alterations to groundwater flow in the vicinity of a plume, then other engineering techniques will be proposed to minimize the impacts to the known plume configuration. The proposed engineering technique will depend on the construction specifications and other site-specific factors, and will be determined by the Owner's State of California, licensed Professional Engineer or Geologist on a site-by-site basis.
- Water removed during dewatering activities will be sampled and tested for profiling and the water disposed of in accordance with applicable permits and regulations. Disposal options may include pre-treatment and discharge into the City's sanitary sewer system under a San Francisco Public Utilities Commission (SFPUC) batch wastewater discharge permit. Compliance with provisions of any discharge permit is the responsibility of the Owner.
- The results of the analysis, plans for dewatering, and disposition of accumulated groundwater will be contained in the notification to the entities listed in Section 4.0.

5.7.2 Prevention of the Potential for Creation of Conduits

As much as practicable, installation of subsurface utilities in areas of known groundwater contamination will be avoided. Prior to subsurface utility trench installation, existing groundwater monitoring data will be evaluated by a Professional Engineer or Geologist licensed in the State of California to identify areas where contaminant plumes remain at the site. As described in Section 5.7.1, a GMP will be approved prior to the start of construction activities. The GMP will be used to mitigate the movement of potentially contaminated groundwater via subsurface utility trenches.

If the trenches extend into the vicinity of known groundwater contaminant plumes, the FFA signatories will be notified as described in Section 4.0. The presence of such trenches may create a horizontal conduit for groundwater and soil vapor flow and migration of COCs. Some of the management measures that may be implemented to minimize the potential for creating horizontal conduits are described below. The appropriate method for managing the groundwater and soil vapor will be determined by a

Professional Engineer or Geologist licensed in the State of California and will be approved in advance by the FFA signatories.

Groundwater

Material that is less permeable than the surrounding soil can be placed at 200-foot intervals through a variety of methods. At a minimum, less permeable material can be placed in the utility trench at the edges of the area of known groundwater contamination to disrupt the flow within the trench backfill. One method is backfilling a short section of the utility pipe with a concrete or cement and bentonite mixture. Another method is the installation of a clay plug by compacting the clay around the circumference of the pipe for a five-foot section of trench. A third method is the installation of barrier collars (cutoff features) around the pipes by forming and pouring concrete in place. Trench plug locations will be selected to mitigate lateral migration of impacted groundwater.

Soil Vapor

To minimize potential migration of soil vapor from utility conduits, currently available engineering controls may be used including sealing the end of utility conduits with inert gas-impermeable material such as closed cell polyurethane foam. The seals will extend into the conduit a minimum of six conduit diameters or six inches, whichever is greater (EPA, 2008).

5.7.3 Prevention of the Potential for Groundwater Intrusion

For new subsurface utilities placed in the areas of known groundwater contamination described in Section 2, or newly discovered areas of groundwater contamination, the pipe joints of non-pressurized utilities (e.g., sanitary sewer, storm drain) will be adequately sealed to prevent COCs in groundwater from entering the buried piping, and all materials will be selected to ensure the integrity of the piping when in contact with known contaminants.

5.8 Storm Water Management Controls

A construction Storm Water Pollution Prevention Plan (SWPPP) will be required prior to the start of construction activities. The SWPPP will provide the framework for contractors performing work at the site. The Construction SWPPP must conform to the requirements of the California State Water Resource Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS00002, Waste Discharge Requirements (WDRs) for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities. As required, a Notice of Intent (NOI) shall be filed with SWRCB prior to commencement of regulated construction work. Compliance with the SWPPP will

be maintained throughout the duration of the construction work. The SWPPP will be prepared by a Qualified SWPPP Developer (QSD) per Section VII of the 2009-0009-DWQ Permit (http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/construction.shtml).

5.9 Groundwater Monitoring Well Protocols

Monitoring wells associated with the groundwater monitoring programs are present within HPS and additional wells associated with remedial activity monitoring may be installed. Prior to the initiation of any demolition or earth-disturbing activities, the presence of groundwater monitoring wells will be identified. A map showing the locations of monitoring wells within HPS may be found in the Hunters Point Shipyard information repositories (Section 3.4) and on the SFDPH Hunters Point Shipyard Redevelopment website. Current monitoring wells located at HPS are presented in Appendix B figures for each Parcel.

Any abandonment, unintentional damage to, or replacement of groundwater monitoring wells will require adherence to the notification protocols as described in Section 4.0. As discussed in Section 4.2, a work plan, prepared by a Professional Engineer or Geologist licensed in the State of California, must be submitted for FFA signatory review and approval prior to the commencement of a restricted activity. Only the FFA signatories can decide that a well that was installed as a part of the groundwater remedy is no longer needed or can be relocated. Assuming that regulatory approval for the work is obtained, any well that is part of a remedial action that is damaged or abandoned during construction must be replaced within sixty calendar days unless the FFA signatories grant an extension.

The Owner is also responsible for providing access for the FFA signatories to the monitoring wells for the purposes of sampling and maintenance. Thus, regulatory approval must be obtained prior to any action that will bar access to a monitoring well for a period of greater than 7 calendar days.

The following sections describe the protocols to follow to protect existing groundwater monitoring wells, in the event of abandonment or replacement of groundwater monitoring wells.

5.9.1 Abandonment of Existing Monitoring Wells

Prior to the abandonment of groundwater monitoring wells, approval will be obtained as required in Section 3.2.1 and the appropriate entities, as described in Section 4.0, will be notified, and if requested, replacement well locations will be selected in coordination with the FFA signatories. If an existing groundwater monitoring well cannot be preserved, the well will be abandoned in accordance with

applicable State and SFDPH regulations. The Owner is responsible for obtaining all appropriate permits and approvals.

Following abandonment of groundwater monitoring wells, a completion report will be prepared by a Professional Engineer or Geologist licensed in the State of California describing the abandonment procedures and submitted to the FFA signatories as described in Section 4.2.3. The report will include:

- The well location;
- Photographic documentation of the abandonment;
- A description of the well destruction activities, including rationale for abandonment;
- All associated permits and waste disposal manifests, if necessary; and
- Department of Water Resources (DWR) well completion and abandonment reports.

5.9.2 Replacement of Monitoring Wells

Any required replacements of abandoned monitoring wells, which are part of an ongoing groundwater monitoring network, will be re-installed within sixty days of the prior well's abandonment date unless the regulatory agencies grant an extension. Replacement wells will be located as close as possible and constructed in the same manner as the original well, and will monitor, to the extent possible, the same groundwater zone as the original well. The Owner is responsible for obtaining all appropriate permits and approvals.

Prior to the replacement of an abandoned well, a work plan, prepared by a Professional Engineer or Geologist licensed in the State of California, will be submitted to the FFA signatories as described in Section 4.0 and approval will be obtained as required in Section 3.2.1. The work plan will include soil management protocols, sampling and analysis requirements for waste profiling, monitoring procedures, health and safety requirements, the boring log of the original well (obtained from the Hunters Point Shipyard information repositories), proposed well construction details, and will describe procedures to be followed during installation of the replacement well. The location of the replacement well must be approved by the FFA signatories.

Following installation of the replacement well(s), a monitoring well installation completion report will be submitted to the appropriate entities as described in Section 4.2.3. The report will include, among other things:

- Well location;
- Identification of driller and drilling procedures;
- DWR Well Completion Report;
- Decontamination procedures;
- Well installation procedures;
- Lithologic log;
- Well development procedures;
- Horizontal location coordinates and vertical elevation of top of casing;
- Well completion details (depth, screen interval, materials used, materials used, surface completion, etc.);
- Initial water level measurement;
- Well sampling, if necessary;
- Permitting information; and,
- Disposition of installation-derived wastes.

The report shall be signed by a Professional Engineer or Geologist licensed in the State of California.

5.9.3 Measures to Protect Monitoring Wells

Existing monitoring wells that are not removed prior to earthwork will be located, marked, and protected by the Owner or other contractors or entities designated by the Owner. All monitoring wells will be addressed in this manner before starting construction anywhere within HPS. Monitoring wells will be marked with brightly colored paint if flush with the ground surface, or painted steel pipes or bollards. The pipes and bollards will extend above ground not less than 4 feet so as to be easily visible. All wells will be kept locked.

5.10 Access Control during Construction and Maintenance Activities

Access to the site during construction and maintenance activities will be limited to authorized personnel in compliance with EHSP requirements (Section 5.1).

The potential for trespassers or visitors to gain access to construction areas and come into direct contact with potentially contaminated soil or groundwater will be controlled through the implementation of the following access and perimeter security measures:

- Except in streets, security fencing will be placed around any site without a regulatory agency approved durable cover or where the durable cover has been disturbed to prevent pedestrian/vehicular entry except at controlled (gated) points. Gates will be closed and locked during non-construction hours. Fencing will consist of a 6-foot chain link or equivalent fence unless particular safety considerations warrant the use of a higher fence. Use of fences during small routine maintenance activities will be determined in the EHSP.
- In streets, use a combination of K-rails or similar barriers and fences with locked gates.
- Post “No Trespassing” signs every 200 feet.
- Post signs every 200 feet warning that contamination within the fenced areas may be harmful to health.

Implementation of appropriate site-specific measures as outlined above will reduce the potential for trespassers or visitors to gain access to construction areas and to come into direct contact with soil or groundwater. Compliance with the specific access control measures is the responsibility of the Owners, Lessees, permittees, tenants, or any other party with the legal right to perform subsurface work on the property.

5.11 Risk Management Measures to be Implemented during Construction or Excavation Activities in Areas of Special Concern

This section describes risk management measures to be followed in areas of special concern. These areas include shoreline areas and Bay sediments.

5.11.1 Shoreline Improvements

Construction and maintenance activities in shoreline areas may include maintenance or improvements to revetment walls, rip rap, sheet piles, quay walls, or bulkheads at the bay margin. Work performed in

these areas will be required to conform to the durable cover and/or revetment walls designs described in the RD Package reports and RAWP. All appropriate Navy documents must be consulted to determine the applicable requirements.

5.11.2 Sediments Outside of RMP Area

Bay sediments, referred to as Parcel F, are outside the scope of this RMP; however, disturbance of these sediments may occur during such activities as outfall construction and development-related shoreline improvements. Work that carries over into Parcel F will be subject to the requirements of agreements between the Navy (as the Parcel F property owner) and the parties performing the work. All work performed in these areas must be planned and coordinated with the Navy (prior to transfer of Parcel F), California State Lands Commission, or other appropriate agencies (U.S Army Corps of Engineers [USACE], U.S. Fish and Wildlife Service [USFWS], San Francisco Bay Conservation and Development Commission [BCDC], RWQCB, USEPA, and DTSC). In addition to coordinating with the agencies listed above, a work plan must be submitted to the FFA signatories for review and approval sixty calendar days prior to conducting any work on Parcel F.

The FFA signatories must be contacted during the planning phase of work to obtain information concerning the nature of the sediments to be disturbed, potential activities being performed in these areas by others, and requirements for work plans and other specific requirements. Contact information for these entities can be found in Appendix C.

6.0 REFERENCES

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TABLES


**TABLE 1. GOVERNMENT ENTITIES WITH INDEPENDENT RISK MANAGEMENT PLAN
OVERSIGHT RESPONSIBILITIES**

RMP Element	Responsible Oversight Agency	Additional Comments
Construction Worker Health and Safety	California Occupational Health and Safety Administration (Cal-OSHA)	
Dust Control	San Francisco Department of Public Health (SFDPH)	
Asbestos Dust Mitigation Plans	Bay Area Air Quality Management District	
Storm Water and Groundwater Management	Regional Water Quality Control Board	
Groundwater Discharges to Sanitary Sewer	San Francisco Public Utilities Commission (SFPUC)	
Permits to engage in subsurface work	SFDBI or SFDPW	Subject to the requirements of Article 31 of the Health Code

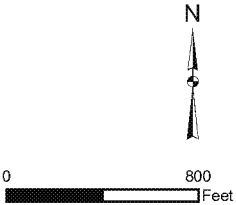
FIGURES



Legend

 RMP Property (To be updated as each Parcel is transfered)

Aerial Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Parcel Location Map
RMP Property
Hunters Point, San Francisco, CA

Geosyntec
consultants

WR1247

March 2013

Figure
1

APPENDIX A

DEFINITION OF TERMS

APPENDIX A Definition of Terms

The following are definitions for terms listed in the RMP:

Area requiring institutional controls for volatile organic compounds: “Area requiring institutional controls for volatile organic compounds” shall mean those areas of land that are subject to institutional controls related to the control of Volatile Organic Compound (VOC) vapors in the subsurface soil, as defined in the Parcel-specific Land Use Controls Remedial Design reports.

Covenant: “Covenant” shall mean the Covenant to Restrict Use of Property, Environmental Restriction (also referred to as the CRUP).

Covenantor: “Covenantor” shall mean the United States of America acting through the DON.

Durable Cover: “Durable cover” shall mean hardscape (e.g., asphalt, buildings, sidewalks, etc.) or a minimum of two feet of clean imported fill that is constructed over native soil, as defined in the ROD for each Parcel.

FFA Signatories: “FFA Signatories” shall mean the agencies that signed the FFA.

General Area Requiring Institutional Controls: “General Area Requiring Institutional Controls” shall mean the entire area subject to institutional controls as defined in the Parcel-specific Land Use Controls Remedial Design reports.

Inspection and Enforcement Entity: “Inspection and Enforcement Entity” shall mean the DON or other entity as designated by the DON and approved by the FFA Signatories that has contractually taken over any of the DON’s responsibilities, among others, for implementing, maintaining, reporting on, or enforcing the restrictions contained in this Covenant.

Land Disturbing Activities: “Land disturbing activities” shall mean those activities which include, but are not limited to: (1) excavation of soil; (2) construction of roads, utilities, facilities, structures, and appurtenances of any kind; (3) demolition or removal of “hardscape” (for example, concrete roadways, parking lots, foundations, asphalt, and sidewalks); (4) any activity that involves movement of soil to the surface from below the surface of the land; and (5) any other activity that causes or facilitates the movement of known contaminated groundwater.

Native Soil: “Native soil” shall mean any soil that was deposited through natural processes or placed as fill material imported from another location to create the extended land mass now occupied by the former Hunters Point Naval Shipyard. The term native soil does include non-native soil historically imported to HPNS as general fill material. The term native soil DOES NOT mean bed rock especially bedrock outcrops as identified in the Navy Remedial Action Work Plans that were specifically excluded from requiring a durable cover. Any imported soil, which has been certified to meet soil importation criteria, and was used to build the durable cover (i.e. a minimum of two feet of clean imported fill) is not native soil. The term native soil DOES NOT include soil that has been imported by the Navy, meaning it has been certified to meet soil importation criteria, and used as backfill in conjunction with any prior Navy removal or remedial action (e.g. soil excavation areas) however the entity wishing to use these soils and

not treat them as native soils will need to verify that the evidence exists to support that the area contains imported soil that is not native soil. Without sufficient evidence, the only assumption that can be made is that the soil beneath the elevation of the property that existed immediately prior to Navy installation of the durable cover (i.e. a minimum of two feet of clean imported fill or hardscape) as documented in the Remedial Action Work Plan for the Property is native soil.

Oversight Agencies: “Oversight Agencies” shall mean the FFA Signatories and the SFDPH.

Owner: “Owner” shall mean any entity with a fee interest in the Property after transfer by the Navy and any successor in interest to such an entity who receives a fee interest in title to any portion of the Property during such ownership of all or any portion of the Property.

Property: the area subject to the RMP as illustrated in Figure One

Regulatory Agencies: “Regulatory Agencies” shall mean the U.S. Environmental Protection Agency (EPA), California Department of Toxic Substances Control (DTSC), California Regional Water Quality Control Board (RWQCB), and the San Francisco Department of Public Health (SFDPH).

Successor Agency: “Successor Agency” shall mean the Successor Agency to the San Francisco Redevelopment Agency.

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APPENDIX B
SUMMARY OF ENVIRONMENTAL CONDITIONS
FOR THE PROPERTY

(Contents of this Appendix will be added prior to transfer of each Parcel. Content will be summarized from each parcel specific FOST.)

APPENDIX C

CONTACT INFORMATION

APPENDIX C Contact Information

FAA Signatory Points of Contact

DTSC

Mr. Ryan Miya
Project Manager
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710
Phone: 510-540-3775
Email: RMiya@dtsc.ca.gov

RWQCB

Mr. Ross Steenson
Project Manager
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Phone: 510-622-2445
Email: rsteenson@waterboards.ca.gov

U.S. EPA

Mr. Craig Cooper
Project Manager
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Phone: 415-947-4148
Email: cooper.craig@epa.gov

U.S. Navy

Mr. Keith Forman
BRAC Environmental Coordinator
BRAC Program Management Office West
1455 Frazee Road, Suite 900
San Diego, CA 92108-4310
Phone: 619-532-0913
Email: keith.s.forman@navy.mil

Other Points of Contact

San Francisco City and County Department of Public Health

Ms. Amy Brownell
Environmental Engineer
1390 Market Street, Suite 210
San Francisco, CA 94102
Phone: 415-252-3800

California State Lands Commission

100 Howe Avenue, Suite 100 South
Sacramento, CA 95825
Phone: 916-574-1900

U.S. Army Corps of Engineers

1455 Market Street
San Francisco, CA 94103
Phone: 415-503-6773

U.S. Fish and Wildlife Service

2800 Cottage Way
Sacramento, CA 95825
Phone: 916-414-6464

San Francisco Bay Conservation and Development Commission

50 California Street, Suite 2600
San Francisco, CA 94111
Phone: 415-352-3600

San Francisco Main Library

100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: 415-557-4500

APPENDIX D

ANNUAL INSPECTION REPORT TEMPLATE

**RISK MANAGEMENT PLAN (RMP)
ANNUAL INSPECTION REPORT
FOR
[INSERT PROPERTY ADDRESS]
SAN FRANCISCO, CALIFORNIA**

Property Owner:	Owner Contact Information:
Report Preparer Name and Affiliation:	Report Preparer Contact Information:
Property Address:	
Date and Time of Inspection:	Weather and tidal conditions at time of inspection:

INTRODUCTION:

In accordance with the final Records of Decision (RODs) at the former Hunters Point Shipyard (HPS) in San Francisco, California, environmental cleanup activities were implemented to provide for protection of human health and the environment. The cleanup activities are overseen by the United States Environmental Protection Agency (USEPA), the California Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB). These agencies plus the Navy, as the previous landowner and CERCLA responsible party, are referred to as the Federal Facility Agreement (FFA) signatories. The FFA is an agreement entered into by the agencies to carry out the remediation of HPS. This Risk Management Plan (hereafter referred to as the RMP) has been prepared for the Property to provide procedures and protocols that shall be used to conduct various restricted activities on the Property following transfer from the Navy to other landowners where a CERCLA remedy has been implemented.

This Annual Inspection Report template has been designed such that the annual reporting requirements for compliance with the RMP and other CERCLA obligations can be comprehensively addressed and documented. The objectives of the Annual Inspection Report are to provide the necessary information to verify that field activities and related risk management measures that have been conducted during the reporting period meet the requirements of the RMP and CERCLA, if applicable. The Annual Report and supporting documentation should include field notes and photographs taken at the time of the inspection to document the condition of the site at the time of the inspection.

As outlined in the RMP, certain activities are allowed to progress without first gaining approval of the FFA Signatories. These activities are called ***Restricted Activities Authorized with Conditions*** and are discussed in more detail in Section 3.2.2 of the RMP. Certain other activities are NOT allowed to progress without first gaining the approval of the FFA Signatories. These activities are called ***Restricted Activities Requiring FFA Signatory Approval*** and are discussed in more detail in Section 3.2.1 of the RMP. Reporting and Notice Protocols are discussed in Section 4.0 of the RMP.

The requirements for long-term Operation, monitoring, and maintenance (O&M) for the remedy components in place on the Property are provided in the Parcel-specific Operation and Maintenance Plan(s). The requirements for Land Use Controls (LUC) are provided in the Parcel-specific Land Use Controls Remedial Design (LUCRD) reports and the Parcel-specific Covenant to Restrict Use of Property (CRUP). These long term O&M and LUC

obligations are independent of the RMP. The O&M and LUC obligations also include annual inspection and reporting requirements for the remedies in place. This Annual Inspection Report template has been designed to satisfy the reporting obligations of the RMP and cross references the long term O&M and LUC reporting obligations as outlined in the RD Package reports for the Property.

This Annual Inspection Report is organized into three Sections. Section 1 provides documentation for Restricted Activities Authorized with Conditions and Section 2 provides documentation for Restricted Activities Requiring FFA Signatory Approval. If Restricted Activities Requiring FFA Signatory Approval were conducted during the reporting period, the approved Work Plan and corresponding Closure Report must be submitted as attachments to this Annual Report. Section 3 provides a summary of action items that are planned and must be completed to remain in compliance with the RMP, O&M and LUC requirements.

Section 1: Restricted Activities Authorized with Conditions

SECTION 1A: ACTIVITY DESCRIPTION

Indicate which restricted activities authorized with conditions have been completed during the reporting period (See RMP Section 3.1.2):	<input type="checkbox"/> Soil excavation, grading and movement of soil within the Property or moving of soil from Parcel A onto the Property. Transporting soil off-site	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Construction of roads, utilities, facilities, structures, and appurtenances of any kind	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Demolition and/or removal of hardscape (e.g., existing concrete or asphalt roadways, parking lots, existing foundations, and existing sidewalks)	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Any activity, not listed above, that moved subsurface soil directly underneath an approved durable cover (e.g., trenching, pothole excavations, scarifying, etc.)	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> In-kind removal and replacement of an	Description of activity (include square footage of area undergoing removal/replacement and attach photographs and

	approved durable cover for areas less than one acre	additional sheets as necessary):
	<input type="checkbox"/> Construction of new street sections (street, curb, gutter, sidewalk, landscape median) for all areas, including areas one acre in size or greater, as long as the street section construction meets appropriate City building codes and/or standard specification.	Description of activity (include square footage of area undergoing removal/replacement and attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Grading or other movement of soil	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Temporary dewatering of below grade excavations (e.g., utility trenches, building foundations, etc.) in areas that are greater than 200 feet from an active groundwater remediation area.	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Disturbance of existing shoreline protection, sea walls, bulkheads, etc.	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Importation of Soil in accordance with approved SIP	Description of activity (attach photographs and additional sheets as necessary):
SECTION 1B: GENERAL SITE MANAGEMENT ACTIVITIES		
Was an environmental health and safety plan prepared for all work indicated in Section 1A, above?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Attach copy of plan(s)
Was a Dust Control Plan prepared for all work indicated in Section 1A, above?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Attach copy of plan and monitoring data collected in accordance with the plan for each activity conducted above.

Was an Asbestos Dust Mitigation Plan prepared for all work indicated in Section 1A, above?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Attach copy of plan and monitoring data collected in accordance with the plan for each activity conducted above.
Was a storm water pollution prevention plan prepared for all work indicated in Section 1A, above?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Attach copy of plan and monitoring data collected in accordance with the plan for each activity conducted above.
Is an annual O&M inspection required?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, attach copy of O&M Inspection report as required in the Parcel-specific Operation and Maintenance Plan.
Is an Institutional Control (IC) Compliance Monitoring Report and Certificate required?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, attach a copy of the IC Compliance Monitoring Report and IC Compliance Certificate as required in the Parcel-specific LUCRD.
SECTION 1C: SOIL MANAGEMENT ACTIVITIES		
For all soil management activities indicated in Section 1A, was surplus soil disposed off-site?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, please attach copies of waste profile, waste manifest, name, address and contact of disposal facility:
For all soil management activities indicated in Section 1A, was soil transported and placed in an on-site location other than its place of origin?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, describe the quantity of soil, origin of soil, location of placement:
For any activities indicated in Section 1A, was soil imported to the site for use as fill material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, describe the quantity, source/origin of soil, location of placement, attach soil chemical profile, provide letter certifying that the imported soil meets the soil import criteria (see RMP, Appendix D):
Indicate any unexpected and/or unknown conditions encountered during soil excavation activities:	<input type="checkbox"/> Evidence of soil contamination (strong odor, visible oily liquid, discolored or stained soil, etc.)	Describe condition and action taken (attach photographs and additional sheets if necessary):
	<input type="checkbox"/> Undocumented structures (e.g.	Describe condition and action taken(attach photographs and

	underground storage tanks, buried sumps, oil water separators, refractory brick, pipelines, etc.)	additional sheets if necessary):
	<input type="checkbox"/> Abrasive blast material	Describe condition and action taken(attach photographs and additional sheets if necessary):
	<input type="checkbox"/> Radiological devices (e.g. radium dials)	Describe condition and action taken(attach photographs and additional sheets if necessary):
	<input type="checkbox"/> Free phase liquid floating on the groundwater (e.g., floating oil)	Describe condition and action taken(attach photographs and additional sheets if necessary):
SECTION 1D: GROUNDWATER MANAGEMENT ACTIVITIES		
For all groundwater dewatering activities, was water discharged to the sanitary sewer or storm drain under an NPDES or SFPUC batch wastewater discharge permit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, attach copy of NPDES permit and compliance documentation. If no, how was water disposed?
For all groundwater not discharged under an NPDES or SFPUC permit, indicate disposal details:	<input type="checkbox"/> Water recycled and used for dust control <input type="checkbox"/> Water contained and allowed to percolate back into groundwater <input type="checkbox"/> Water contained and allowed to evaporate <input type="checkbox"/> Other (describe):	Provide and attach supporting information including volume of water, chemical test results, approval letters, etc.
SECTION 2: RESTRICTED ACTIVITIES REQUIRING FFA SIGNATORY APPROVAL		
SECTION 2A: ACTIVITY DESCRIPTION		

Indicate if any activities involved the alteration, disturbance or removal of any component of a response or cleanup action in conflict with planned redevelopment activities	<input type="checkbox"/> Groundwater monitoring well and/or groundwater remediation system, including extraction wells, conveyance piping, and treatment system.	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Soil vapor extraction system, including extraction wells, monitoring wells, conveyance piping and treatment system.	Description of activity (attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Change in durable cover type from hardscape (asphalt, concrete, building foundations, etc.) to soil or landscape (planter areas, grass parkway/lawn areas, vegetated land surfaces, etc.) or from soil/landscape to hardscape.	Description of activity (include square footage of area undergoing change and attach photographs and additional sheets as necessary):
	<input type="checkbox"/> In-kind removal and replacement of durable cover for areas equal to, or in excess of one acre – except construction of new street sections (street, curb, gutter, sidewalk, landscape median) for all size areas, including areas one acre in size or greater, is a Restricted Activity Authorized with Conditions as long as the street section construction meets appropriate City building codes and/or standard specifications. Road section construction should be noted under appropriate Restricted Activity Authorized with Conditions section.	Description of activity (include square footage of area undergoing removal/replacement and attach photographs and additional sheets as necessary):
	<input type="checkbox"/> Temporary dewatering of below grade	Description of activity (attach photographs and additional

	excavations (e.g., utility trenches, building foundations, etc.) in areas that are within 200 feet of an active groundwater remediation area.	sheets as necessary):
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SECTION 2B: REQUIRED DOCUMENTATION FOR ALL ACTIVITIES REQUIRING FFA APPROVAL			
For all restricted activities requiring a Work Plan/Activity Closeout Report and related FFA signatory approval, indicate which documentation was produced:	<input type="checkbox"/> Work Plan	Attach copy of Work Plan and FFA Signatory Work Plan approval letter for each activity requiring a Work Plan.	
	<input type="checkbox"/> Monitoring documentation in accordance with Work Plan	Attach all required monitoring records and data. (Include photographs and additional sheets as necessary).	
	<input type="checkbox"/> Activity Closeout Report	Attach copy of Activity Closeout Report, including monitoring documentation and FFA signatory approval of Closeout Report for each activity indicated above.	
SECTION 3: COMPLIANCE ACTIONS TO BE COMPLETED			
FOLLOW UP ACTION DESCRIPTION:	Responsible Party (Owner, Tenant, Contractor, or Developer)	Target Completion Date:	Actual Completion Date:
1. Item 1 description:			
2. Item 2 description:			
3. Item 3 description:			
4. Item # description:			

Certification Statement:

Under penalty of perjury, I certify that the above information is true and correct and appropriately reflects the activities that have occurred during the inspection period and the condition of the site is as represented at the time of the inspection.

By: _____

Company: _____

Name: _____

Date: _____

Title: _____

Registration number and expiration date: _____

APPENDIX E

ENVIRONMENTAL HEALTH AND SAFETY PLAN OUTLINE

APPENDIX E

Environmental Health and Safety Plan Outline

All EHSPs will include a description of specific tasks to be performed, key personnel, health and safety responsibilities, site background, job hazard analysis and mitigation, air monitoring procedures, PPE, work zones and site security measures, decontamination measures, general safe work practices, contingency plans and emergency information, medical surveillance and specific training requirements.

SITE EMERGENCY INFORMATION

1.0 INTRODUCTION

- 1.1 Purpose of the Site Health and Safety Plan
- 1.2 Implementation and Modification of the Site Safety Plan
- 1.3 Project-Related Documents

2.0 BACKGROUND AND DESCRIPTION OF WORK

- 2.1 Site Description and Background
- 2.2 Scope of Work

3.0 KEY PERSONNEL ROLES AND RESPONSIBILITIES

- 3.1 Project and Task Managers
- 3.2 Field Supervisor
- 3.3 Site Health and Safety Officer
- 3.4 Competent Person
- 3.5 Subcontractors, Visitors and Other Onsite Personnel

4.0 JOB HAZARD ANALYSIS

5.0 GENERAL SITE SAFE WORK PRACTICES

- 5.1 Biological Hazards
- 5.2 Radiological Hazards
- 5.3 Dust Control
- 5.4 Electrical
- 5.5 Excavation/Trenching
- 5.6 Fire/Explosion Control
- 5.7 Hand and Power Tools
- 5.8 Heat Stress
- 5.9 Heavy Equipment
- 5.10 Lifting
- 5.11 Material Handling
- 5.12 Noise
- 5.13 Overhead / Falling Debris
- 5.14 Slips/Trips/Falls
- 5.15 Utilities: Underground and Overhead
- 5.16 Vehicle Traffic

- 6.0 CHEMICAL HAZARDS
 - 6.1 Chemicals of Concern
 - 6.2 Action Levels
- 7.0 PERSONAL PROTECTIVE EQUIPMENT
- 8.0 AIR MONITORING PROCEDURES
 - 8.1 Ambient Air Monitoring
 - 8.2 Worker Exposure Monitoring
- 9.0 TRAINING AND MEDICAL MONITORING
- 10.0 CONTINGENCY AND EMERGENCY EVACUATION PLANS
- 11.0 SANITATION, HYGIENE AND DECONTAMINATION
 - 11.1 Sanitation and Personal Hygiene
 - 11.2 Drinking Water
 - 11.3 Personnel Decontamination
 - 11.4 Equipment Decontamination
- 12.0 SITE AND TRAFFIC CONTROL PLAN AND SITE SECURITY
 - 12.1 Site Control
 - 12.1.1 Support Zone
 - 12.1.2 Contamination Reduction Zone
 - 12.1.3 Regulated Area/Exclusion Zone
 - 12.2 Traffic Control
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APPENDIX F

DUST CONTROL PLAN

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FIGURES

- 1 Parcel Location Map

ACRONYMS AND ABBREVIATIONS

APCO	Air Pollution Control Officer
ATCM	Asbestos Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
CCR	California Code of Regulations
CP/HPS	Candlestick Point/Hunters Point Shipyard
DTSC	Department of Toxic Substance Control
EIR	Final Environmental Impact Report
HEPA	high-efficiency particulate air
HPS	Hunters Point Shipyard
km/h	kilometers per hour
mph	mile per hour
RACM	regulated asbestos-containing material
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

1.1 Document Objective

This RMP dust control plan has been prepared to address development activities that will occur at the Property in San Francisco, California (Figure 1).

This RMP Dust Control Plan has been prepared in accordance with the requirements of the permit process established in Article 31 and compliance with Article 22B of the City and County of San Francisco Health Code and certain Bay Area Air Quality Management District (BAAQMD) regulations often applicable to redevelopment activities, as further described herein. This plan addresses dust control measures that will be implemented during deconstruction and development of horizontal infrastructure at the site.

This plan applies to demolition of existing structures, and dust control associated with soil disturbance or excavation at the Property. In accordance with the requirements of Article 31, this plan was prepared under the supervision of a professional engineer registered in the State of California.

1.2 Regulatory Basis

The Final Environmental Impact Report (EIR) 2010 for the Candlestick Point/Hunters Point Shipyard project includes mitigation measures requiring actions that will reduce or eliminate adverse environmental impacts during development at the Property. These mitigation measures were adopted in a Mitigation Monitoring and Reporting Program. The Disposition and Development Agreement incorporates Final EIR mitigation measures that are relevant for Phase II development at the Property and includes the commitments for implementing mitigation measures set forth in Section 18 of the Disposition and Development Agreement and in the EIR.

Dust control is one of the specific mitigation measures applicable to development at the Property, and this plan specifically identifies the steps that will be taken to reduce air emissions during demolition of existing structures, grading, utility work, and construction of site infrastructure. This plan also includes the necessary monitoring and reporting requirements.

This Dust Control Plan incorporates requirements of the following applicable regulations:

- California Code of Regulations (CCR) Title 17, Section 93105, the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations.
- Bay Area Air Quality Management District (BAAQMD) Regulation 2, Permits (also addressed in project specifications).
- BAAQMD Regulation 6, Particulate Matter and Visible Emissions.
- BAAQMD Regulation 11, Rule 2, Asbestos Demolition.
- BAAQMD Regulation 11, Rule 14, Asbestos Containing Serpentine.
- City and County of San Francisco Article 22B, Construction Dust Control Requirements.
- CP/HPS EIR, Mitigation Measure HZ-15: Asbestos Dust Mitigation Plans and Dust Control Plans.

Article 22B specifies a goal of minimizing visible dust emissions from the site and Article 22B and Section 106A.3.2.6 of the San Francisco Building Code outline housekeeping measures required to meet this goal. Mitigation Measure HZ-15 similarly defines best management practices (BMPs) including wetting and seeding unpaved, inactive areas, minimizing activity during periods of high wind, sweeping paved areas, covering trucks, etc. Additionally, BAAQMD Regulation 6, which generally prohibits emission of visible dust beyond the property boundary, is also applicable.

Because the site is in an area with serpentine rock, CCR Title 17, Section 93105 (ATCM) applies. ATCM includes, among other things, the requirement for submission of an Asbestos Dust Mitigation Plan for BAAQMD approval prior to grading activities. The ATCM also includes very specific practices to be implemented during construction. Mitigation Measure HZ-15 also provides BMPs for handling serpentine material, and BAAQMD Regulation 11, Rule 14 prohibits the use or sale of asbestos-containing serpentine materials for road surfacing.

In addition to emission controls for dust generated by general construction activities, specific requirements apply to asbestos-related dust generated by demolition activities. A qualified subcontractor licensed and experienced to manage asbestos- and lead-contaminated building materials will perform demolition of existing structures. The subcontractor will demonstrate compliance with the requirements of BAAQMD 11- 2, which states that demolition activities will not be allowed to cause any visible plumes from any operation involving the demolition, removal, manufacture or fabrication of any product containing asbestos.

Contractors selected to perform demolition and grading will be responsible for obtaining applicable permits as described in the project specifications.

2.0 BACKGROUND

2.1 Site Description

The Navy's Hunters Point Shipyard was divided into 11 parcels of varying sizes to facilitate environmental cleanup and property transfer. The Property is bounded by private property and city rights-of-way to the north and west and San Francisco Bay to the south and east. The Property includes the portion of the former Navy Hunters Point Shipyard illustrated in Figure 1.

The Property consists primarily of flat lowlands that were constructed by placing borrowed fill material from various sources, including crushed serpentinite bedrock from the adjacent highland and dredged sediments. The serpentinite bedrock and serpentinite bedrock-derived fill material consist of minerals that naturally contain asbestos and relatively high concentrations of arsenic, manganese, nickel, and other metals. The Property is covered with a durable cover, which consists of buildings or hardscape or at least two feet of clean soil placed over Native Soil.

2.2 Site History

The history of the Property is described in the many documents referenced in the RMP.

2.3 Redevelopment Scope of Work

The redevelopment of the Property will consist of construction of new buildings, streets, and parks with all associated utilities, landscaping, and enhancements.

2.4 No Visible Dust Goal

The dust control measures set forth in this plan are intended to achieve a goal of no visible dust emissions associated with soil disturbance or excavation, to the extent required by Mitigation Measure HZ-15, BAAQMD Regulation 6, and the provisions of Articles 22B (areas over one-half acre) and 31 of the San Francisco Health Code. As required by Article 22B and Mitigation Measure HZ-15, a Figure will be developed, prior to initiation of demolition and earth moving activities, which will identify the sensitive receptors (residence, school, childcare center, hospital, or other health-care facility or group living quarters) located within 1,000 feet of the Property. The Figure will become an attachment of and incorporated into this DCP.

The DCP requires compliance with the following specific mitigation measures to the extent deemed necessary to achieve no visible dust at the property boundary:

1. Keep all graded and excavated areas, areas around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour.
2. Analysis of wind direction and placement of upwind and downwind particulate dust monitors.
3. Record keeping for particulate monitoring results.
4. Requirements for shutdown conditions based on wind, dust migration, or if dust is contained within the property boundary but not controlled after a specified number of minutes.
5. Establishing a hotline for surrounding community members who may be potentially affected by Project-related dust. Contact person shall respond and take corrective action within 48 hours. Post publicly visible signs around the site with the hotline number as well as the phone number of the BAAQMD and make sure the numbers are given to adjacent residents, schools, and businesses.
6. Limiting the area subject to construction activities at any one time.
7. Installing dust curtains and windbreaks on windward and downwind sides of the property lines, as necessary. Windbreaks on windward side should have no more than 50% air porosity.
8. Limiting the amount of soil in trucks hauling soil around the job site to the size of the truck bed and securing with a tarpaulin or ensuring the soil contains adequate moisture to minimize or prevent dust generation during transportation.
9. Enforcing a 15 miles per hour (mph) speed limit for vehicles entering and exiting construction areas.
10. Sweeping affected streets with water sweepers at the end of the day.
11. Hiring an independent third party to conduct inspections for visible dust and keeping records of those inspections.
12. Minimizing the amount of excavated material or waste materials stored at the site.
13. Prevent visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property.

In addition to conducting inspections for visible dust, particulate monitoring for the presence of airborne particulates will also be conducted, to the extent required under this plan, using real-time particulate dust monitors as detailed on Page F-18. If readings are recorded above the action level(s), site specific actions will be specified based on the type of activity being conducted. Actions could include evaluation of site

activities or stopping work until additional controls are implemented to reduce dust generation from the specific work area causing the problems.

3.0 POTENTIAL SOURCES OF EMISSIONS

Planned site activities have the potential to generate emissions in the form of fugitive dust and vehicle emissions. Possible sources of emissions include:

- Demolition Activities – Wrecking, intentional burning, moving or dismantling of any load-supporting structural member, or portion of a building. Any related cutting, disjointing, stripping, or removal of structural elements. Crushing of concrete for recycling/reuse.
- Construction Traffic – Movement of construction equipment around the construction area is capable of creating construction emissions in excavated or cleared areas. There is also the potential for vehicular traffic on paved or unpaved roads and parking lots to produce construction emissions.
- Site Preparation and Foundation Work – Grading, excavation of footings and foundations, and backfilling operations can produce both fugitive dust and vehicle emissions.
- Trenching Activities – Excavation of trenches for the installation of underground utilities can cause construction emissions.
- Material Stockpiles – Stockpiles of excavated soil from trenching activities may contribute to windborne dust emissions.
- Soil Transport - Loading of soil into transport vehicles for disposal may contribute to windborne dust emissions.
- Cleanup and Grading – Backfilling, grading, and re-vegetating of the excavated areas may produce both fugitive dust and vehicle emissions.

The California Code of Regulations (CCR) Title 17, Section 93105, the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prescribes specific dust mitigation measures.

Dust mitigation methods to be implemented at the site are described in detail below.

4.0 GENERAL CONSTRUCTION EMISSIONS CONTROL METHODS

This section details dust control methods for fugitive dust and vehicle emissions generated from the following construction activities:

- Dust entrained during on-site travel on paved and unpaved surfaces.
- Dust entrained during site grading, excavation, crushing, and back-filling at the construction site.
- Dust entrained during aggregate and soil stockpiling, loading, and unloading operations.
- Wind erosion of areas disturbed during construction activities.
- Vehicle emissions associated with construction equipment.

Additional requirements for dust control during demolition and deconstruction activities are described below. General dust control measures are also described in Section 5.3.3 of the RMP.

4.1 Construction Traffic

4.1.1 On-site Traffic Control

Fugitive dust emissions from construction traffic traveling on unpaved surfaces will be controlled with the following mitigation measures:

1. Visible speed limit signs will be posted at the construction site entrances. No vehicle will exceed 15 mph within the construction site.
2. Implementation of erosion control measures identified in the Construction Storm Water Pollution Prevention Plan (SWPPP), to be provided separately, will control fugitive dust emissions from public roadways and parking areas.
3. Gravel access pads will be constructed in the temporary stockpile locations. Four to six inches of appropriate gravel will be spread evenly to construct the pads. Additional gravel will be added periodically to maintain effectiveness.
4. One or more of the following:
 - All unpaved roads in the project construction site will be watered every two hours or frequently enough to maintain adequate wetness. The frequency of watering can be reduced or eliminated during periods of precipitation. (Article 21, Section 100 et seq. of the San Francisco Public Works Code requires that non-potable reclaimed water be used for this

purpose.) Watering frequency may be increased during above average ambient air temperatures or wind speeds.

- Chemical dust suppressants can also be applied consistent with manufacturer's directions.
- Maintaining a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel; or
- Any other measure as effective as the measures listed above.

4.1.2 Track-out Prevention

Track-out of loose materials will be controlled using gravel pads along with a tire washing/cleaning station installed at the access point from the project site to the paved road to prevent tracking of mud onto public roadways. The stabilized construction entrance (gravel pads) will be installed according to the specifications provided in the Erosion and Sediment Control Plan of the SWPPP for the project. All vehicle tires will also be inspected and washed as necessary to prevent trackout prior to entering the paved roadways. Any visible track-out on a paved public road at any location where vehicles exit the work site **MUST** be removed. Removal **MUST** be done using wet sweeping or a high-efficiency particulate air (HEPA) filter-equipped vacuum device at the end of the work day or at least one time per day.

The following mitigation measures will be followed for fugitive dust emissions from construction traffic traveling on paved surfaces:

1. The main access and egress routes to and from the construction site for construction employees and delivery trucks will be paved prior to the initiation of construction.
2. No construction vehicles will be allowed to exit the construction site except through the treated entrance roadways. Gravel pads will be installed at all egress points to prevent tracking of mud onto public roadways.
3. Construction areas adjacent to and above grade from any paved roadway will be treated with BMPs, as specified in the Construction SWPPP.
4. All paved roads within the construction site will be swept twice daily with a wet sweeper.
5. At least the first 500 feet of any public roadway exiting from the construction site will be swept twice daily. (The use of dry rotary brushes is expressly prohibited except where preceded or

accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

If any of the above mitigation measures fail to properly control fugitive dust emissions, one or more of the following reasonably available control measures, will be applied:

1. Unpaved active portions of the construction site will be watered or treated with dust control solutions to minimize windblown dust and dust generated by vehicle traffic.
2. Paved portions of the construction site will be swept more frequently as necessary to control windblown dust and dust generated by vehicle traffic. Streets adjacent to the construction site will be swept as necessary to remove accumulated dust and soil. Water may also be applied to the paved roads if necessary.
3. Physical or chemical stabilization will be applied to control dust on unpaved roads if necessary.
4. Gravel, re-crushed/recycled asphalt or other material of low silt content (<5 percent) and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, will be applied to a depth of 3 or more inches, if necessary. .
5. Vehicle trips will be reduced if necessary.

Construction employees will park in the paved or graveled areas to reduce fugitive dust emissions.

4.1.3 Off-site Transport

No trucks will be allowed to transport excavated material off-site unless:

1. Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and
2. Loads are adequately wetted during the loading process and:
 - Covered with tarps (or equivalent); and
 - Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than twelve inches from the top and that no point of the load extends above the top of the cargo compartment.
3. Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.

Vehicles will be checked to ensure that they are tarped and to remove any excess material on the shelf or exterior surfaces of the cargo compartment. All off-site haul trucks will access the site via paved access roads and established gravel pads. Every off-site haul truck will proceed through the decontamination gravel pad/tire cleaning area prior to departure from the site. Site personnel will be stationed at the access point to monitor inflow/outflow to and from the site and will be responsible for inspecting all vehicles exiting and performing the cleaning of the tires.

4.2 Site Preparation and Grading

Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line.

Fugitive dust emissions from site preparation and foundation work will be controlled using the following methods:

1. During clearing and grubbing, surface soils will be pre-wet to the depth of anticipated cut where equipment will be operated. Soil moisture content will be sufficiently maintained to minimize fugitive dust creation. For construction fill areas which have an optimum moisture content for compaction, completion of the compaction process will be performed as expeditiously as possible to minimize fugitive dust.
2. If compaction will not take place immediately following clearing and grubbing, the surface soil will be stabilized with dust palliative and water to form a crust on the soil surface.
3. Keep all graded and excavated areas, visibly dry unpaved roads, and parking and staging areas wetted at least three times per shift daily during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be needed whenever wind speeds exceed 15 miles per hour.
4. Use dust enclosures, curtains, and dust collectors as necessary to control dust in the excavation area.
5. Graded areas will be stabilized with chemical stabilizers within 5 working days of grading completion. Seed and water all unpaved, inactive portions of the lot or lots under construction to maintain a grass cover if they are to remain inactive for long periods during building construction.
6. Halt all clearing, grading, earthmoving, and excavating activities when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures.

7. Limit the area subject to excavation, grading or other construction activity at any one time.
8. Storage piles must be kept adequately wetted, treated with a chemical dust suppressant or covered with tarp(s) when material is not being added or removed from the pile.

4.3 Crushing

It is anticipated that concrete crushers will be mobilized to the site to crush and recycle concrete debris resulting from building and roadway demolition. Crushing operations will be visually monitored for the appearance of fugitive dust. If dust is being generated, water will be applied to control the dust.

The crusher may also be used to crush well-cemented concretions of other minerals within the serpentinite of the Franciscan formation that cannot be broken into manageable sizes using the standard construction equipment mobilized to the site for mass grading (bulldozers, excavators, scrapers, etc.). Serpentinite boulders will not be processed by the crusher.

4.4 Trenching Activities

Excavation activities will be visually monitored daily for the generation of fugitive dust. If dust is being generated, water will be applied to the point of excavation or drilling to control dust.

- Soil will be pre-wet prior to excavation to reduce dust migration. Additional water will be added during active excavation, material handling, and loading. Active excavation areas will be wet a minimum of twice daily during dry weather and more frequently as needed.
- The height from which excavated soil is dropped into trucks and onto either stockpiles or dewatering pads will be minimized.
- Dust suppressants will be applied in sufficient quantities to inactive disturbed areas so as to form a crust and create a stabilized surface.
- Backfill material will be covered or enclosed when not actively handled.
- Four to six inches of appropriate gravel will be spread evenly at key on-site loading areas, the temporary soil staging, and off-site transport loading area in order to reduce the potential for soil track-out beyond the site.

4.5 Screening

- Fugitive dust emissions from loading the screening pads, either by excavator, or by conveyor will be controlled by ensuring that all excavated material is adequately wetted prior to loading.

- Loader buckets will be emptied slowly and drop height from loader bucket minimized.
- Halt all loading activities during periods of sustained strong winds, hourly average wind speeds of 25 mph (40 km/h or greater).

4.6 Material Stockpiles

During excavation, backfilling and grading, soils may be stockpiled in areas adjacent to the activity. BMPs may include diversion of drainage from the stockpiles, installation of silt fencing/straw bale filter barriers on the downgradient toe of the stockpile slope, track-walking the slopes, and dust control. Stockpiles must be kept adequately wetted, treated with a chemical dust suppressant, or covered with tarp(s) when material is not being added or removed from the pile.

4.7 Foundation Work

1. Sprinklers, wobblers, water trucks, or water pulls will be used to pre-water during cut and fill activities to allow time for penetration.
2. Building pads will be laid as soon as possible after grading to minimize fugitive dust emissions, unless seeding or soil binders are used in the interim.
3. Wind erosion control techniques, such as wind breaks, water/chemical dust suppressants, and vegetation, will be used on all construction areas that may be disturbed. Any windbreaks used will remain in place until the soil is stabilized or permanently covered with vegetation.
4. For back-filling during earthmoving operations, backfill material will be watered as needed to maintain moisture. If required, backfill soil will be mixed with water prior to moving. Loader buckets will be emptied slowly and drop height from loader bucket minimized. Once backfill material is in place, water will be applied immediately to form a crust, if necessary. A water truck or large hose will be dedicated to back-filling equipment and operations.
5. Use of high-pressure air to blow soil and debris from the form will be avoided; instead, water spray, sweeping, and/or an industrial shop vacuum will be used to clear the form.

4.8 Post-Construction Stabilization of Disturbed Areas

Unpaved areas disturbed during excavation, grading, and/or construction activities will be covered with one of the following to reduce dust generation on the site:

- An approved vegetative cover.
- Coverage with a minimum of 3 inches of non-asbestos-containing material.

- Building and related hardscape surface paving approved in the building permit.

4.9 Additional Requirements for Serpentine Material

Excavated materials, which will be transported off site, will be analyzed for asbestos content. Excavated materials being transported off-site with greater than 1 percent by-weight asbestos will be handled and disposed of off-site in accordance with all requirements for proper disposal of asbestos.

BAAQMD Regulation 11, Rule 14 also defines procedures and notifications required if serpentine material is sold for use as a surfacing agent. No serpentine will be used for surfacing material or sold from the site.

The following waste management methods will be used when handling serpentine waste designated as hazardous:

- Keep asbestos-containing waste material adequately wetted at all times during handling and loading.
- Adhere to requirements of Section 11-2-608 for marking of vehicles used to transport asbestos-containing waste.
- Maintain waste shipment records as specified in Section 11-2-502.
- Provide a copy of the waste shipment record to the disposal site owner or operator upon delivery.
- Contact transporter and/or owner of the disposal site if the waste shipment has not arrived within 35 days of initial acceptance by the transporter as hazardous waste.
- Provide a written report to the Air Pollution Control Officer (APCO) if the waste shipment is not received within 45 days of initial acceptance by the transporter.

5.0 DEMOLITION EMISSIONS CONTROL METHODS

In addition to emission controls for dust generated by general construction activities described in the previous section, specific requirements apply to asbestos-related dust due to demolition activities. A qualified subcontractor, licensed and experienced to manage asbestos- and lead-contaminated building materials, will perform demolition of existing structures. The subcontractor will demonstrate compliance with the requirements of BAAQMD 11-2, which states that demolition activities will not be allowed to cause any visible dust plumes from any operation involving the demolition, removal, manufacture or fabrication of any product containing asbestos. The subcontractor will implement the additional control methods summarized below.

5.1 Demolition Activities

Fugitive dust emissions from demolition activities will be controlled in accordance with the requirements of BAAQMD Section 11-2-303, as summarized below:

- All exposed regulated asbestos-containing material (RACM) will be adequately wetted and kept wet during cutting, stripping, demolition, renovation, removal and handling operations both inside and outside of a building.
- In lieu of wetting, a local HEPA filter exhaust, ventilation, and collection system designed and operated to capture the emissions from RACM and prevent any visible emissions to the outside air may be used under certain circumstances and subject to BAAQMD approval; requests for approval of dry removal must be in writing.
- RACM shall be removed prior to demolition, or other operations that would either break up, or preclude access to the RACM for subsequent removal.
- Elements that have RACM may be removed at any time in units or sections so long as the exposed RACM during cutting or disjointing is adequately wetted or encapsulated to prevent emissions of particulate asbestos material.
- All RACM not removed in units or sections shall be adequately wetted and kept wet, and transported to the ground in leak-tight chutes or containers, using negative air and HEPA equipment.
- Any building, structure, room, facility or installation from which RACM is being stripped or removed shall be isolated by physical barriers from the outside air to the extent feasible. Such

barriers shall include transparent viewing ports which allow observation of all stripping and removal of RACM from outside the barrier. The negative air pressure inside the isolated work area shall be maintained at a pressure differential relative to adjacent, non-isolated areas, and negative air pressure ventilation equipment shall be operated continuously from the establishment of isolation barriers through final cleanup of the work area following stripping or removal of RACM. Any such local exhaust ventilation system shall filter the air from the isolated area with a HEPA filter (or equivalent) prior to exhausting.

- All friable asbestos-containing waste material related to a specific demolition, renovation or removal, including pre-existing debris, shall be handled in accordance with the provisions of BAAQMD Sections 11-2-303 and 11-2-304.
- Except for ordered demolitions, prior to commencement of any demolition or renovation, the owner or operator shall thoroughly survey the affected structure or portion thereof for the presence of asbestos-containing material, including Category I and Category II nonfriable asbestos-containing material. The survey shall be performed by a person who is certified by the Division of Occupational Safety and Health, who has taken and passed a USEPA-approved Building Inspector course, and who conforms to the procedures outlined in the course. The survey shall include sampling and the results of laboratory analysis of the asbestos content of all suspected asbestos-containing materials. This survey shall be made available to the Air Pollution Control Officer (APCO) prior to the commencement of any RACM removal or any demolition.
- When a structure, or portion thereof, is demolished under an ordered demolition, the survey must be done prior to, during, or after the demolition but prior to loading or removal of any demolition debris. If the debris contains regulated asbestos-containing material, all of the debris shall be treated as asbestos-containing waste material pursuant to BAAQMD Section 11-2-304.
- No RACM shall be stripped or removed unless at least one on-site representative, such as a foreman or management-level person or other authorized representative, certifies that he or she is familiar with the provisions of this rule as it pertains to demolition and renovation and the means of compliance therewith, and is present during all stripping and removing of RACM.
- If RACM is not discovered until after demolition begins and, as a result of the demolition, cannot be safely removed, the asbestos-contaminated debris shall be treated as asbestos-containing waste material and kept adequately wet at all times until disposed of according to the provisions of BAAQMD Section 11-2-304.

- The owner or operator of any building or other stationary structure to be demolished pursuant to an order of an authorized representative of a state or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse or has been declared a public nuisance, shall comply with the survey, wetting, and disposal requirements of BAAQMD.
- If demolition is accomplished by intentional burning, all RACM, including Category I and Category II nonfriable asbestos-containing material, shall be removed before burning.

5.2 RACM Waste Disposal

To prevent emissions from asbestos-containing material, the waste generated during the demolition process will be handled in accordance with BAAQMD 11-2-304, including the following:

- Treat asbestos-containing waste by thoroughly mixing with water and store in leak-proof containers before removing from containment area.
- Process asbestos-containing waste into non-friable form before disposal.
- Convert RACM and asbestos-containing waste material into asbestos-free material.
- Keep asbestos-containing waste material adequately wetted at all times after demolition and during handling and loading.
- Adhere to requirements of Section 11-2-608 for marking of vehicles used to transport asbestos-containing waste.
- Maintain waste shipment records as specified in Section 11-2-502.
- Provide a copy of the waste shipment record to the disposal site owner or operator upon delivery.
- Contact transporter and/or owner of the disposal site if the waste shipment has not arrived within 35 days of initial acceptance by the transporter.

Provide a written report to the APCO if the waste shipment is not received within 45 days of initial acceptance by the transporter.

6.0 MONITORING AND RECORDS

6.1 General

A hotline must be established and posted prior to starting construction and maintained during construction in a publicly visible sign with the telephone number for surrounding community members to call and report visible dust problems. The contractor will respond promptly and take corrective action within 48 hours. The number must be given to adjacent residents, schools, and businesses.

Monitoring to ensure compliance with the provisions of this plan will be performed by an independent third party observer. Control of visible dust will be the primary responsibility of the contractor conducting the potential dust generating activities at the Property. The Owner will provide quality assurance monitoring and will have the authority to direct the contractor to implement the measures outlined below if visible dust is observed.

6.2 Visible Dust during Site Activities

The goal of this plan is no visible dust. While all parties understand that soil disturbance and excavation activities, by their nature, will produce dust, site controls will be used to mitigate visible dust as it is generated in an effort to achieve the no visible dust goal. This section establishes the steps that must be taken toward achieving the goal of no visible dust from soil disturbance or excavation in terms of the amount of time permitted to address visible dust plumes. The criteria in this section apply to an active work site when equipment and personnel are driving on the site and performing work activities. The “initial observation” starts the clock for the required response measures described below. The “initial observation” is the time any of the following personnel observe visible dust: (a) workers who are disturbing soils or excavating for the permitted activity or (b) Owner, supervisor, contractor, subcontractor or consultant with responsibility for monitoring the permitted activity.

6.2.1 Visible Dust Crossing the Property Boundary

In the event visual dust from soil disturbance or excavation is observed crossing the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

1. The specific source of the emissions will be immediately shut down and a more aggressive application of the existing mitigation measures as described in Section 2.4 (No Visible Dust Goal) will be directed.

2. Once the mitigation measures have been applied, the source of emissions will resume and observations will be conducted to verify that the mitigation measures were successful.

6.2.2 On-site Visible Dust

In the event visible dust from soil disturbance or excavation is observed on-site, but does not cross the property boundary, the following procedures will be followed to ensure adequate mitigation measures are in place to address the dust:

1. A more aggressive application of the existing mitigation measures as described in Section 2.4 (No Visible Dust Goal) or additional measures of dust suppression will be directed to the specific source of emissions within 60 minutes of the initial observation.
2. If despite these more aggressive and/or additional methods the visible dust emissions continue for 90 minutes from the time of the initial observation, the specific source of the emissions will be temporarily shut down until the implemented dust control mitigations is effective or, due to changed conditions, no longer necessary.

6.3 Windblown Visible Dust during Inactive Periods

The standards in this section apply on weekends and holidays or any other times when no equipment and personnel are performing work activities on site. In the event of observations of windblown visible dust plumes from soils originating on the project site, mitigation measures as described in Section 2.4 (No Visible Dust Goal) will be directed within less than 4 hours of making the observation. Mitigation measures will be applied until the visible dust plumes originating from the project site are minimized or eliminated. Any observations of visible dust originating from the project site during inactive periods should be reported to the Community Hotline.

6.4 Dust Monitoring

At the start of the potential dust generating activities on a particular piece of the Property, real-time particulate dust monitors (Miniram PDR-1000 or equivalent) will be placed at adequate downwind locations to measure particulates at the Property. Upwind locations at the site are not required to be monitored because over five years of particulate monitoring data collected at the adjacent HPS Development Co., LP project have documented no evidence of upwind particulate being blown onto the site. Prevailing wind on the site is from the west or southwest towards the east or northeast. Monitoring locations will initially be established based on these prevailing winds but will be checked daily and adjusted if necessary to maintain the downwind locations.

At a minimum, at the start, the particulate data will be collected and reviewed daily. It is anticipated that data review will be more frequent at project startup to validate BMPs. If dust is generated from on-site soil disturbance or excavation activities and dust levels from these activities are recorded above the approved action level (see Section 6.5), project-specific contingency measures will be implemented until the project comes back into compliance. Contingency actions could include evaluation of site activities or stopping work until additional controls are implemented to reduce dust generation from the specific work area causing the exceedance. During periods of torrential rain (when all earth disturbing activity ceases because work conditions are unsafe) or extended rain realtime particulate monitoring may cease to prevent damage to the instruments and because rain is documented to be effective for dust control.

After the initial four (4) weeks of monitoring and demonstration of the contractor's ability to maintain all particulate below the required action levels, the contractor may present a summary of the data and propose a reduction of monitoring frequency to SFDPH. Copies of any approved revision to monitoring frequency will be sent to the FFA signatories and the BAAQMD.

6.5 Recordkeeping and Reporting

Prior to the start of construction, the contractor shall prepare a project-specific supplement to the DCP which includes a figure depicting the sensitive receptors within 1000 feet of the Property and a figure depicting particulate monitoring stations and appropriate action levels. This information will be submitted to SFDPH for review and approval (in their oversight capacity for Article 31 compliance) prior to the start of dust generating activities. The FFA signatories and the BAAQMD will receive copies of the project-specific supplement and the SFDPH approval.

For each day dust monitoring occurs, field personnel will generate a log of all readings, descriptions of daily work, observations on weather conditions (wind speed and direction, at a minimum), a summary of dust control means and methods employed by the contractor(s) and descriptions of specific responses to dust readings above the action level. Dust monitoring data logs and related field notes will be included with daily construction reports. Dust monitoring logs and related field notes will be kept for a minimum of three years after the completion of construction.


BAAQMD 11-2, Section 11-2-502 describes reporting and recordkeeping requirements for RACM demolition activities.

ATCM requires that results of air monitoring and any testing of serpentine materials be reported to the APCO and that records be retained for at least 7 years following the completion of the project.

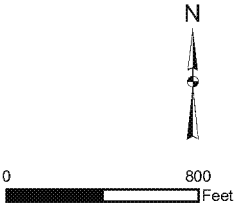
APPENDIX F FIGURE



Legend

 RMP Property (To be updated as each Parcel is transfered)

Aerial Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Parcel Location Map
RMP Property
Hunters Point, San Francisco, CA

Geosyntec
consultants

WR1247

March 2013

Figure
1

APPENDIX G

SOIL IMPORTATION PLAN OUTLINE

APPENDIX G

Soil Importation Plan Outline

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APPENDIX H

GROUNDWATER MANAGEMENT PLAN OUTLINE

APPENDIX H

Groundwater Management Plan Outline

A Groundwater Management Plan (GMP) will be prepared to describe the pumping of groundwater (dewatering) in support of development activities. The outline presented below will be used to guide preparation of the GMP, such that, a consistent format and content is generated thereby facilitating regulatory review and approval. This outline is intended to be utilized for the development of GMPs associated with temporary projects of short duration. While uncommon, there may be projects that propose pumping of groundwater on a permanent basis (e.g., ongoing dewatering of the area around and within below grade parking lots). If this is proposed, a much more detailed plan encompassing permanent dewatering system design, geotechnical considerations, permitting and construction, among other items, would be necessary. The outline presented herein could provide a framework for designing and permitting such a system but the purpose of this outline is geared towards projects that require temporary dewatering to support development construction.

In accordance with the Risk Management Plan (RMP), Section 5.7, a GMP must be submitted to and approved by the Oversight Agencies prior to field activities occurring. The Oversight Agencies include the Federal Facility Agreement (FFA) Signatories (Navy, United States Environmental Protection Agency [USEPA], Department of Toxic Substances Control [DTSC], Regional Water Quality Control Board [RWQCB]) and the San Francisco Department of Public Health (SFPDH). The RMPs state that each development activity that involves a dewatering process will be required to create and implement a GMP acceptable to the Oversight Agencies.

Parcels B through F within the Hunters Point Shipyard (HPS) have been the subject of extensive investigation and remediation via the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process and the petroleum hydrocarbon corrective action process, thus, there are numerous reports and sources of data that can be used to assist with the preparation of a GMP. At a minimum, the Record of Decision, Remedial Design Package, Remedial Action Work Plans, Remedial Action Completion Reports, Petroleum Corrective Action Reports, and Petroleum Corrective Action No Further Action letters prepared for each Parcel provide a summary of known groundwater conditions including presentation of sampling locations and analytical results. These plans and data collected in support of the Navy's cleanup activities can be found at the information repository located at the Main Branch of the San Francisco Public Library (*insert address here*) and on-line at (*insert web address here*). Briefly, and as described in Section 2.2 of the RMP, localized areas of groundwater contamination are present within each Parcel that may affect the post closure development activities.

The outline presented below uses Section 5.7.1 of the RMP to define certain information to be included in a GMP. Also presented below is other required information that describes the scope of work: Project Description, Subsurface Conditions, Hydrogeological Analysis, Description of Groundwater Extraction Means and Methods and Permitting and Reporting Requirements. The GMP should be prepared well in advance of actual construction activities to ensure adequate time is allowed for review and comment by the Oversight Agencies ultimately resulting in approval of the GMP.

1.0 INTRODUCTION

- 1.1 Project Description – This section will provide information about the project that will pump groundwater. Items to address:
 - 1.1.1 Type of project (building construction, park construction, or infrastructure construction). Include information like depth of planned excavation, description of what will be built in the subsurface (foundation, elevator pit, storm/sanitary sewer pump station, etc.). Also include information whether the project will

- require temporary or long term/permanent dewatering (e.g., below grade parking garage)
- 1.1.2 Project Schedule. A project schedule should be presented. This schedule should, at a minimum, include the following line items: presentation of action(s) requiring dewatering, installation of groundwater extraction systems, schedule and duration of anticipated extraction activities, total project duration.
- 1.2 Local Groundwater Description – This section will provide a description of known groundwater conditions in and around the area proposed for dewatering.
 - 1.2.1 Presentation and discussion of existing groundwater data (locations, levels, flow direction, flow velocity, chemicals of concern (COCs), type of data, date of collection, source of data with references).
 - 1.2.2 Discussion of known groundwater plumes
 - 1.2.2.1 Location relative to proposed project
 - 1.2.2.2 Description of completed or ongoing remediation efforts. Include current regulatory status of plume(s)
 - 1.2.3 Presentation of relevant soil and/or geologic conditions (provide source of data with references) and presentation of geologic cross sections.

2.0 GROUNDWATER MANAGEMENT PLAN

- 2.1 Description/Presentation of Hydrogeologic Evaluation – This section will present general hydrogeological conditions at the project site and the type of further hydrogeologic evaluation that will need to be performed prior to the proposed dewatering project. Particular emphasis will be placed on answering the fundamental question of whether the proposed dewatering will negatively impact known areas of affected groundwater. This section will take into consideration all of the parameters listed above. At a minimum, this section should identify the project specific evaluation and should include the following:
 - 2.1.1 Radius of influence of pumping
 - 2.1.2 Description of potential negative effects on known groundwater plumes, if any
 - 2.1.2.1 Provide a figure depicting nearby known plumes, locations of nearby existing monitoring/extraction wells.
 - 2.1.2.2 Provide a description of the frequency of monitoring performed by others (e.g., the base-wide groundwater monitoring program).
 - 2.1.2.3 Present most recent data set from the nearby and existing groundwater monitoring wells to establish baseline water quality.
 - 2.1.3 Proposed mitigation measures to minimize/eliminate negative effects on known groundwater plumes.
 - 2.1.3.1 Pumping rate and/or duration to minimize/eliminate negative effects on known groundwater plumes
If necessary based on the judgment of a qualified professional, the installation of “guard wells” may be appropriate to provide an early warning of adverse impacts from the temporary pumping on the nearby plume.

- 2.1.3.2 If necessary, collect groundwater samples from select wells in the vicinity and as presented in Section 2.1.2.1 and 2.1.3.2, if basewide groundwater monitoring program is not already collecting and analyzing samples with sufficient frequency to ensure existing plumes are not negatively affected by localized and temporary pumping.
- 2.1.3.3 Other engineering measures (e.g., sheet pile walls, tide fluctuation management, injection grouting, etc.)
- 2.1.4 Suggested Permit and Regulatory Structure
 - 2.1.4.1 This Section will propose a permit/regulatory structure to discharge. Should include a conceptual description of, at a minimum, permit discharge requirements and the means and methods to comply with the permit requirements.
- 2.2 Description of Groundwater Extraction – This section is based on the project needs and the results of the hydrogeologic evaluation presented in Section 2.1 of the GMP. This section will present the following information or identify where and when it must be provided as required in the discharge permit:
 - 2.2.1 Duration of dewatering efforts. Essential to make the distinction between a temporary effort vs. long term or permanent dewatering that will function for the life of the proposed project
 - 2.2.2 Means/methods of pumping and discharge
 - 2.2.2.1 Description of dewatering system (pump type, piping type and layout, treatment system components, discharge point, etc.)
 - 2.2.2.2 Description of specific control measures to prevent silt generation or the discharge of silt-laden water (both at point of pumping and any “end of pipe” measures)
 - 2.2.2.3 Description of chemical treatment to address pre-existing condition of extracted groundwater (e.g., activated charcoal, physical filtration, pH adjustment, etc.)
 - 2.2.2.4 Description of any additional measures to slow or minimize groundwater infiltration into below grade excavations for the duration of the project (e.g., sheet pile walls, injection grouting, management of tidal water if close to the bay margin, not-to-exceed pumping rates, etc.)
 - 2.2.2.5 Description of conveyance system, temporary storage (if any)
 - 2.2.2.6 Description of discharge point. At a minimum, describe physical location and ownership of discharge point (e.g., San Francisco Public Utilities Commission (SFPUC) combined system). Describe several alternative discharge points at each parcel, if possible.
 - 2.2.2.7 Where appropriate, provide schematic or engineering drawings of dewatering and treatment systems, locations of any wells, discharge point(s), sampling point(s)
 - 2.2.2.8 If discharging to the San Francisco Bay, provide communication and documentation on approval process with RWQCB/SFDPH, etc. The discharge of extracted groundwater may require coverage under the

Groundwater VOC and Fuel General Permit (Order No. R2-2012-0012,
NPDES No. CAG912002).

3.0 PERMITTING AND REPORTING REQUIREMENTS

- 3.1 Description of Permit Requirements – This section will present the permit itself (attached to the GMP). Also to be presented are a description of specific compliance requirements to be met.
 - 3.1.1 Performance/discharge criteria (e.g., turbidity, pH, chemical-specific parameters, conductivity, biological oxygen demand [BOD], dissolved oxygen [DO], etc.).
 - 3.1.2 Sampling criteria. Should include field monitoring, field observation, collection and laboratory analysis of discharge water samples
- 3.2 Description of Reporting Requirements – This section will present the following:
 - 3.2.1 Permit-specific reporting obligations could include the following:
 - 3.2.1.1 Field notes/observations
 - 3.2.1.2 Laboratory results
 - 3.2.1.3 Quarterly/annual reporting
 - 3.2.1.4 Project close out process
 - 3.2.2 Regulatory Agency Involvement and Reporting
 - 3.2.2.1 SFDPH requirements via Article 31
 - 3.2.2.2 Other City and County of San Francisco (City) entities, when appropriate: SFPUC, San Francisco Department of Public Works (SFDPW-Bureau of Construction Management [BCM]), Department of Building Inspection (DBI)
 - 3.2.2.3 RWQCB (TPH Only), DTSC and possibly USEPA (for comingled CERCLA and TPH).
 - 3.2.2.4 Navy
 - 3.2.2.5 refer to ongoing RMP and Operation and Maintenance Plan (O&M Plan) reporting obligations of owners

4.0 HEALTH AND SAFETY

- 4.1 Site Specific Health and Safety Measures
 - 4.1.1 This section will reiterate groundwater-specific health and safety measures designed to protect workers conducting dewatering and subsurface work. It is assumed that a project-specific Environmental Health and Safety Plan (EHSP) will be prepared by each contractor that will address worker health and safety issues for the duration of the project. It is this ESHP from which the groundwater-specific health and safety measures are taken.

5.0 DISCOVERY OF UNKNOWN

- 5.1 Refer reader to Unknown Condition Response Plan
- 5.2 Provide a brief description concerning Health and Safety issues, notification requirements as well as site security

6.0 REFERENCES

This section will present typical bibliographic information as well as physical location of all reports used in the preparation of this document. Possibly attach relevant analytical data

ATTACHMENTS

Figure 1	Site Location Map
Figure 2	Site Plan showing project footprint, dewatering location(s), conveyance system, treatment/storage system location, discharge point, sampling location(s)
Table 1	Analytical data used in the Hydrogeologic analysis
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APPENDIX I

UNKNOWN CONDITION RESPONSE PLAN

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1.0 UNKNOWN CONDITIONS - APPROACH

This Unknown Condition Response Plan (UCRP) has been prepared to address unknowns discovered during development activities within the Property. Although a significant amount of investigation and remediation has already been implemented by the Navy and an approved remedy is in place, the potential exists for encountering unknown conditions during the course of development. Unknown conditions may include unanticipated soil and/or groundwater contamination, abrasive blast material (ABM), unexpected subsurface structures, buried pipelines, materials potentially presenting an explosive hazard, radiological devices, and/or other visual or olfactory evidence of a release. This UCRP establishes protocols for the initial response to the discovery of an unknown condition, for notification and consultation with Oversight Agencies, and ultimately for a path forward such that development activities can continue safely and timely within the context of the approved CERCLA remedy. As part of the site-specific health and safety training that will be required of equipment operators and site workers, instruction will be given on how to identify and respond to potential unknown conditions.

This UCRP is intended to fulfill the requirements of Article 31 of the San Francisco Health Code (<http://library.municode.com/HTML/14136/book.html>) for preparation of an unknown contaminant contingency plan. Notwithstanding any other provision of this UCRP to the contrary, this UCRP does not create any requirement or obligation on the part of the Owner to perform any corrective action with respect to any CERCLA, TPH, or other environmental condition.

The general approach to addressing the discovery of an unknown condition is presented in the attached flowcharts (I-1, I-2, and I-3). The primary objectives outlined in Flowchart I-1 are to: i) provide initial required response and notifications of the discovered condition, ii) assess if the unknown condition is a Special Condition (described below), iii) prescribe the collection and analysis of initial samples; iv) reach a conclusion as to whether the condition qualifies as a CERCLA condition, TPH condition, or a comingled condition; and v) determine whether any response action is required. A TPH condition for which a response action is required will then generally follow the process depicted on Flowchart I-2. A CERCLA or comingled condition for which a response action is required will then generally follow the process depicted on Flowchart I-3. During the process, and as indicated on all three flowcharts, it will be necessary to provide the Oversight Agencies and/or FFA Signatories, as appropriate, with initial sampling results, documentation of proposed work, and results of response actions, when complete.

1.1 Initial Response Procedures

Buried physical objects including underground storage tanks (USTs), sumps, barrels, drums, containers, or other underground structures of potential concern, and/or evidence of contamination, visual or olfactory, could be discovered during grading and site excavation activities. If an unexpected subsurface structure of potential concern and/or visual or olfactory evidence of contamination is encountered, notification and health and safety procedures will be invoked and work will proceed in accordance with this UCRP, Flowchart G-1. Olfactory or visual evidence of contamination, which would trigger the use of the UCRP, include, but are not limited to:

- Soil that is oily, shiny, or saturated with free-phase petroleum product;
- Soil with a significant chemical or hydrocarbon-like odor;
- Significantly stained or colored soil that reasonably indicates a potential contaminant source;
- Groundwater odor, sheen, or free-phase globules; or
- Any other indication that contamination may exist.

1.1.1 Initial Response Procedures – Special Condition

Upon the discovery of a potential unknown condition the Owner must first determine whether the condition is a “Special Condition,” and whether an appropriate path forward exists so that work can continue safely and in accordance with applicable regulatory protocol. This response is documented on Flowchart I-1.

A “Special Condition” is defined here to include material potentially presenting an explosive hazard; chemical, biological, or radiological warfare agents; and radiological materials. These determinations will be made in accordance with site-specific Environmental Health and Safety Plans (EHSPs) and this UCRP. If the unknown condition is determined to be a Special Condition, work at the location of the unknown condition shall stop, the unknown condition shall be secured, and the Oversight Agencies (Regulatory Agencies and the Navy) will be notified of the discovery within twenty-four (24) hours. Although work will be halted at the location of the discovered Special Condition, work may proceed at other locations not affected by the Special Condition under the guidance of the Risk Management Plan (RMP).

1.1.2 Initial Response Procedures – Not a Special Condition

This Section guides initial response actions upon discovery of an unknown condition. Described here are those specific actions that will be conducted by the Owner to determine the type of condition, provide direction on initial sampling and analytical procedures, and provide a framework for initiating initial excavation and management of contaminated soil.

Note that sampling for radionuclides of concern are not part of the typical response procedure upon discovery of an unknown condition as the Property covered under the RMP and this UCRP will have received a “free release” designation from the California Department of Public Health.

After a determination has been made that the unknown condition is not a Special Condition, the Oversight Agencies will be notified and the condition will be further assessed using field screening instruments, physical observation, and sampling of the affected media (soil, groundwater, sediment, etc.). In accordance with the site-specific EHSP, appropriate measures will be undertaken to ensure that assessment activities will be conducted in a safe manner. The Site Safety and Health Officer (SSHO) will be responsible for performing activity hazard analyses and evaluating any change in site conditions. The SSHO has the authority to stop work if an unsafe condition arises.

As appropriate, initial assessment could also include excavation and segregation of soil that contains visual or olfactory evidence of contamination. In the event some amount of excavation will occur, the Owner will lay down plastic sheeting, place the affected soil on the sheeting, and at the end of each day’s activities, cover the resultant soil stockpile with plastic sheeting (or equivalent). Field documentation will be generated that describes the location and type of the affected media, describes any samples collected (number, location, type), conveys results of any field screening (OVM/OVA/PID results), provides volume estimates of removed material, and describes stockpile control measures.

A minimum of one sample will be collected for each media (liquid in object, soil, sediment, or groundwater) that is suspected to be impacted. Collected samples will be analyzed for the following constituents:

- Volatile organic compounds (VOCs) including methyl tertiary butyl ether (MTBE) by EPA Test Method 8260B or approved equivalent;
- Semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs) by EPA Test Method 8270C or approved equivalent;
- CAM 17 Metals EPA Test Method 6010B/7400 or approved equivalent;

- Pesticides EPA Test Method 608 or EPA Test Method 8081A or approved equivalent;
- Polychlorinated biphenyls (PCBs) EPA Test Method 608 or EPA Test Method 8082 or approved equivalent;
- TPH-gasoline range organics (TPH-GRO) EPA Test Method 8015B or approved equivalent;
- TPH-diesel range organics (TPH-DRO) EPA Test Method 8015B or approved equivalent; and,
- TPH-motor oil range organics (TPH-MORO) EPA Test Method 8015B or approved equivalent.

Owner will then determine if the condition is a TPH issue or a CERCLA or comingled issue, and will inform the Oversight Agencies of the determination. The results of the initial sampling will be compared to the Tier 1 Petroleum Program Strategy Screening levels (Table I-1) and/or ROD remediation goals (Tables I-2 and I-4). Evaluation of the analytical results will allow the Owner to determine, in consultation with the Oversight Agencies, whether the unknown condition is:

1. A condition that does not require further response or regulatory oversight;
2. A total petroleum hydrocarbon (TPH) condition that requires further evaluation and response;
3. A CERCLA condition that requires further evaluation and response;
4. A CERCLA condition for which there is a prescribed remedy in the ROD; or,
5. A CERCLA condition for which a new CERCLA action is required.

This determination will be made, and the subsequently required course of action will occur, as follows:

No Further Response. No further response or regulatory oversight is required if the condition is a TPH condition, TPH constituents in samples are below screening levels, and the condition is not an object or structure. (Flowchart I-1, Boxes 5, 5A, 6). In addition, no further response or regulatory oversight is required if the condition is a CERCLA or co-mingled condition, the CERCLA constituent is addressed in the ROD, the constituents in samples are below screening levels, and the condition is not an object or structure. (Flowchart I-1, Boxes 7, 9, 11, 12). In such cases, Owner notifies the Oversight Agencies of its conclusion (including analytical results) and proceeds with work.

Additional TPH Evaluation and Response Under RMP. If the condition is a TPH condition, additional evaluation and/or response under section I2.0 (Flowchart I-2) is required if constituents in samples are above screening levels or the condition is a subsurface object or structure. (Flowchart I-1,

Boxes 5, 5A, 5B). In such cases, Owner notifies the Oversight Agencies of its conclusion (including analytical results) and proceeds with work under section I2.0 (Flowchart I-2).

Additional CERCLA Evaluation and Response Under RMP. If the condition is a CERCLA or comingled condition, additional evaluation and/or response under section I3.0 (Flowchart I-3) is required if the condition is an object or structure, or if the CERCLA constituent is addressed in the ROD, constituents in samples are above screening levels, and the Oversight Agencies determine that there is no prescribed remedy in the ROD suitable to handle the condition. The Oversight Agencies will make such determination upon receipt of a technical memorandum and recommendation from Owner. (Flowchart I-1, Boxes 5, 5A, 5B). Owner then proceeds with work under section I3.0 (Flowchart I-3).

CERCLA Condition Addressed by Prescribed ROD Remedy. The Owner may address the condition pursuant to the remedy prescribed in the ROD if the condition is a CERCLA or comingled condition, the CERCLA constituent is addressed in the ROD, constituents in samples are above screening levels, and the Oversight Agencies determine that a prescribed remedy in the ROD is suitable to handle the condition. (Flowchart I-1, Boxes 7, 9, 10, 10A). Additionally, the Owner may address the CERCLA or comingled condition pursuant to the remedy prescribed in the ROD if the CERCLA constituent is not addressed in the ROD, but the Oversight Agencies determine that a prescribed remedy in the ROD is suitable to handle the condition. (Flowchart I-1, Boxes 7, 8, 10A). In both situations, the Oversight Agencies will make such determinations upon receipt of a technical memorandum and recommendation from Owner.

CERCLA Condition Requiring New CERCLA Action. Further CERCLA action in the form of a Time Critical Removal Action (TCRA), Non-Time Critical Removal Action (NTCRA), or ROD Modification, etc., as appropriate, must take place if the condition is a CERCLA or comingled substance not addressed in the ROD, and the Oversight Agencies determine that a new CERCLA action is necessary. (Flowchart I-1, Boxes 7, 8, 8A). Such determination will be made upon receipt of a technical memorandum and recommendation from Owner on how to proceed. Upon such determination, Owner will stop all work. The Navy will undertake the CERCLA action or enter into an agreement with Owner to undertake the action.

2.0 TOTAL PETROLEUM HYDROCARBONS (TPH) CONTAMINATION

If, after the initial assessment, the unknown condition is determined to be a petroleum hydrocarbon condition, work will proceed following the process outlined in Flowchart I-2. In general, all work will comply with the Hunters Point Shipyard Petroleum Corrective Action Plan (PCAP). The lead regulatory agency for encountered petroleum hydrocarbon conditions will be the RWQCB, in consultation with the Navy.

If the unknown condition encountered is a physical object(s) determined to contain or have contained petroleum COPCs only, including such items as a UST, pipelines, sump, drum or other containers, the object(s) will be removed in consultation with the RWQCB (Flowchart I-2, Box 2B). Upon removal of the object(s), the surrounding material will be assessed visually, olfactorily, and with field instruments for evidence of contamination. If evidence of contamination is present in the surrounding material, removal of the affected material will proceed as presented in Section I2.1 and Flowchart I-2, Box 2A.

If there is no evidence of additional contamination in the excavation, other than the removed physical object, confirmation soil samples from the excavation will be collected. One discrete excavation bottom sample and one discrete sample from each sidewall will be collected for analysis. Sidewall samples will be collected at the halfway point down the sidewall. The collected soil samples will be analyzed for the following constituents, as applicable, and based on initial sample results of the contents of the removed object:

- TPH-GRO;
- TPH-DRO;
- TPH-MORO;
- BTEX, MTBE; and,
- PAHs.

Soil sample results will be screened against the Tier I Petroleum Program Strategy Screening levels for shallow soils (<10 feet below ground surface [bgs], residential reuse, non-drinking water resources) presented in Table I-1 (Shaw, 2007). If soil samples contain COPCs above the Tier I Petroleum Program Strategy Screening Criteria levels, removal of the affected material will proceed as presented in Section I2.1.

If soil samples do not contain COPCs above the Tier 1 Petroleum Program Strategy Screening Criteria levels, work will proceed under the guidance of the RMP, the Regulatory Agencies will be notified, and a Site Closeout report will be prepared documenting a no further action recommendation for RWQCB approval.

Groundwater encountered during the removal of the object(s) will be addressed as presented in Section I2.2.

2.1 Excavation of TPH Affected Material

If physically or instrument-screened affected material is encountered during the removal of an object(s) or as a stand-alone material, excavation and segregation of the affected material will proceed. The excavated affected material will be segregated, stockpiled, and secured pending characterization sampling for reuse, further treatment, or off-site disposal. The excavation will incrementally extend laterally and vertically to the maximum extent feasible to remove obviously affected material. In the case of affected material that cannot be readily identified by visual or olfactory methods, the use of field screening instrumentation such as a PID or OVM will be implemented to determine the lateral and vertical extent of the excavation. Vertical excavation will extend until obvious or instrument-screened affected material is removed to an initial depth of 10 feet bgs or groundwater is encountered, whichever is shallower. If affected material extends past the initial depth of removal (10 feet bgs or first groundwater, whichever is shallower), the RWQCB will be notified and consulted to determine if the remaining contamination represents a human and/or ecological hazard based on soil exposure pathways (e.g., proposed site reuse) and location of the contamination (e.g., distance from Bay Margin). If during the excavation of the affected material the volume of the excavated material exceeds 100 cubic yards, the RWQCB will be notified and excavation of additional material will continue.

Upon removal of the affected material, excavation confirmation samples will be collected from the excavation at a frequency of one discrete bottom sample per 400 square feet of excavation bottom (ITSI, 2009). In addition to excavation bottom samples, one sidewall sample will be collected every 20 linear feet of sidewall and collected at the halfway point down the sidewall for excavations that are less than 5 feet and do not extend to the groundwater (ITSI, 2009). For excavations deeper than 5 feet, sidewall samples will be collected on the basis of one sample for every 5 vertical feet of sidewall (ITSI, 2009). For smaller excavations (less than 100 square feet), one bottom sample and a sample from each sidewall will be collected. For excavations extending to groundwater, one sidewall sample will be collected from the soil 6-inches above static groundwater level. Sample locations will be selected by the field personnel

based on where the highest remaining contaminant concentrations are expected or field observations indicating the presence of remaining contamination.

Excavation confirmation soil samples will be analyzed for the presence of the following constituents, as applicable, based on initial characterization results of the contents of the removed object and/or encountered stand-alone affected material:

- TPH-GRO;
- TPH-DRO;
- TPH-MORO;
- BTEX/ MTBE; and,
- PAHs.

The results of the excavation confirmation soil samples will be compared to the Tier I Petroleum Program Strategy Screening Criteria levels for shallow soil (Shaw, 2007) presented in Table I-1.

If concentrations of TPH COPCs remaining in the excavation are below the Tier I Petroleum Program Strategy Screening Criteria levels, the RWQCB will be notified, excavation will stop, and characterization samples of the excavated segregated material will be collected as per Section I2.3 (Flowchart I-2, Box 11).

If, however, the concentrations of remaining COPCs are above the Tier 1 Screening Criteria levels, an evaluation of the site conditions using the Petroleum Strategy 2012 Low-Risk Fuel Site Criteria will be made in consultation with the RWQCB. If the Low-Risk Fuel Site criteria evaluation indicates that the site is suitable for no further action, no additional soil removal will occur, and characterization samples will be collected from the excavated segregated material as per Section I2.3 (Flowchart I-2, Box 11). If the Low-Risk Fuel Site Criteria evaluation indicates that the site requires further action, the RWQCB will be notified and either excavation and segregation of the affected material will continue in consultation with the Regulatory Agencies, or the RWQCB will be consulted and a determination will be made if preparation of a site-specific CAP is required (Flowchart I-2, Box 10).

2.2 Encountered Groundwater

If groundwater with a measureable TPH free-product thickness of greater than 0.10 feet is encountered during removal of the object(s) and/or stand-alone affected material, the Regulatory Agencies will be

notified and consultation with the RWQCB will take place to determine if preparation of a Corrective Action Plan (CAP) is required. If groundwater without measurable free product is encountered, a grab groundwater sample will be collected and analyzed for the presence of the following constituents, as applicable, and based on initial characterization results of the contents of the removed object and/or encountered stand-alone affected material:

- TPH-GRO;
- TPH-DRO,
- TPH- MORO;
- BTEX/MTBE; and,
- PAHs

Upon collection of the grab groundwater sample, care will be taken to minimize the amount of sediment collected along with the water portion of the sample. Additionally, a note to the laboratory on the chain of custody will be added that will direct the laboratory to allow the sample(s) sufficient time for settling prior to extraction and analysis. This will help reduce the frequency and magnitude of false positives when trying to address the question of how much TPH is dissolved in the grab groundwater sample(s).

Laboratory results of the collected groundwater sample will be compared against the TPH Groundwater Screening Criteria levels presented in Table I-1 and based on the location of the discovered unknown condition (e.g., distance from the Bay Margin). If total TPH, benzene, or MTBE concentrations in the collected grab groundwater sample exceed the TPH Groundwater Screening Criteria levels for the location where the TPH unknown condition was encountered, the Regulatory Agencies will be notified and consultation with the RWQCB will take place to determine if preparation of a CAP is necessary (Flowchart I-2, Box 5C). If encountered groundwater does not contain TPH COPCs above the TPH Groundwater Screening Criteria levels, work will continue under the guidance of the RMP and the RWQCB will be notified (Flowchart I-2, Box 8C).

2.3 Segregated Material Characterization

Segregated material (e.g., soil) derived during the removal of the encountered object and/or as part of affected material excavation activities will be sampled for characterization purposes. Composite sampling of the segregated material will not be allowed and the number of discrete, segregated material samples collected for waste profiling will be as follows (DTSC, 2001):

Volume of Segregated Material	Samples per Volume
Up to 1,000 cubic yards	1 discrete sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 discrete samples for first 1,000 cubic yards + 1 discrete sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 discrete samples for first 5,000 cubic yards + 1 discrete sample per additional 1,000 cubic yards

DTSC Information Advisory, Clean Imported Fill Material, October 2001.

Segregated material samples will be analyzed for the following constituents, as appropriate, and based on the initial characterization analytical results collected when the affected material was first encountered:

- TPH-GRO;
- TPH-DRO;
- TPH-MORO;
- BTEX, MTBE; and/or,
- PAHs.

Sample results will be compared to the Tier I Petroleum Program Strategy Screening Criteria levels for shallow soil (Table I-1). If TPH COPCs are below the Tier I Petroleum Program Strategy Screening Criteria levels for shallow soil, the Regulatory Agencies will be notified and a Site Closeout Report recommending no further action will be prepared and submitted to the RWQCB for approval. The segregated material will be used as fill material that will be placed under the durable cover that constitutes part of the final CERCLA remedy.

For segregated material that exceeds Tier I Petroleum Program Strategy Screening Criteria levels, the Regulatory Agencies will be consulted to determine if on-site treatment is an option (Flowchart I-2, Box 13). If on-site treatment is approved, the segregated material will be treated until TPH chemical concentrations are below the Tier I Petroleum Program Strategy Screening Criteria levels for shallow soil. Treated soil will be used as fill material and placed under the durable cover. No further action would be recommended and a Site Closeout Report will be prepared and submitted for RWQCB review and approval (Flowchart I-2, Box 17).

If on-site treatment is not approved, the excavated material will be hauled off-site for disposal in accordance with applicable laws and regulations (Flowchart I-2, Box 15). After disposal of the

segregated material, no further action will be recommended and a Site Closure Report will be prepared and submitted for RWQCB approval.

3.0 CERCLA CONTAMINATION

If during the initial evaluation of the physical object and/or affected material analytical results described in Section II.1.2, the unknown condition is determined to require additional evaluation and response (Flowchart I-1, Box 13), the following process will be undertaken as outlined in the CERCLA Unknown Condition Flowchart (Flowchart I-3).

If the unknown condition encountered is a physical object(s) including such items as USTs, pipelines, sumps, drums, or other containers, the object(s) will be removed in consultation with the FFA Signatories (Box 2B, Flowchart I-3). Upon removal of the object(s), the surrounding material will be assessed for physical characteristics (visibly stained soil and chemical odor) and screened with field instruments for evidence of contamination. If evidence of contamination is present in the surrounding material, removal of the affected material will proceed as presented in Section I3.1.

If there is no evidence of additional contamination in the excavation, other than the removed physical object, confirmation samples from the excavation will be collected. One discrete excavation bottom sample and one discrete sample from each sidewall will be collected for analysis. Sidewall samples will be collected at the halfway point down the wall. Collected soil samples will be analyzed for the following constituents, as applicable, and based on initial assessment results of the contents of the removed object:

- VOCs including MTBE;
- SVOCs;
- CAM 17 Metals;
- Pesticides;
- PCBs;
- TPH-GRO;
- TPH-DRO; and,
- TPH-MORO.

Collected soil sample results will be screened against the appropriate ROD remedial goals presented in Tables I-3 (ChaduxTt, 2009) and I-4 (Navy, 2009). For petroleum hydrocarbon-specific conditions, Tier I Petroleum Program Strategy Screening Criteria levels (Shaw, 2007) presented in Table I-1 will be used as screening criteria. If soil samples contain COPCs above the appropriate ROD remedial goals or Tier I

Petroleum Program Strategy Screening Criteria levels, removal of the affected material will proceed as presented in Section I3.1.

If soil samples do not contain COPCs above ROD remedial goals or Tier I Petroleum Program Strategy Screening Criteria levels, a Closure Report will be prepared for FFA Signatory review and approval, and work will continue under the guidance of the RMP (Box 6B, Flowchart I-3). If it is determined that no additional sampling of the excavation is necessary, excavation will stop, and characterization of the excavated segregated material (excavated during the removal of the subsurface object) will proceed as per Section I3.3 (Box 7A, Flowchart I-3).

Encountered groundwater during the removal of the object(s) will be addressed as presented in Section I3.2.

3.1 Excavation of CERCLA Affected Material

If physically or instrument-screened affected material is encountered during the removal of an object(s) or as a stand-alone material, the excavated affected material will be segregated, stockpiled, and secured pending characterization sampling for reuse, further treatment, or off-site disposal. The excavation will incrementally extend laterally and vertically to the maximum extent feasible to remove obviously affected material. In the case of affected material that cannot be readily identified by physical characteristics, the use of field screening instrumentation such as a PID or OVM will be implemented to assess the lateral and vertical extent of the excavation. Vertical excavation will extend until obviously affected material is removed to an initial depth of 10 feet bgs or groundwater is encountered, whichever is shallower. If affected material extends past 10 feet bgs, the FFA Signatories will be notified and consulted to determine if the remaining contamination represents a human and/or ecological hazard based on soil exposure pathways (e.g., proposed site reuse) and location of the contamination (e.g., distance from Bay Margin).

Upon removal of the affected material, excavation confirmation samples will be collected from the excavation at a frequency of one discrete bottom sample per 400 square feet of excavation bottom (ITSI, 2009). In addition to excavation bottom samples, one sidewall sample will be collected every 20 linear feet of sidewall and collected at the halfway point down the wall for excavations that are less than 10 feet and do not extend to the groundwater (ITSI, 2009). For excavations deeper than 5 feet, sidewall samples will be collected on the basis of one sample for every 5 vertical feet of sidewall (ITSI, 2009). For smaller excavations (less than 100 square feet), one bottom sample and a sample from each sidewall will be collected. For excavations extending to groundwater, one sidewall sample will be collected from the soil 6 inches above static groundwater level. Sample locations will be selected by the field personnel based

on where the highest remaining contaminant concentrations are expected or field observations indicating the presence of remaining contamination.

Excavation confirmation samples will be analyzed for the presence of the following constituents, as applicable, and based on initial characterization results of the contents of the removed object and/or encountered stand-alone affected material:

- VOCs (including MTBE);
- SVOCs;
- CAM 17 Metals;
- PCBs;
- Pesticides;
- TPH-GRO;
- TPH-DRO; and,
- TPH-MORO.

The results of the excavation confirmation samples will be compared to the applicable ROD remediation goals for soil presented in Tables I-2 and I-4, and Tier I Petroleum Program Strategy Screening Criteria levels presented in Table I-1 (if applicable).

If concentrations of COPCs remaining in the excavation are below the appropriate ROD remedial goals and Tier I Petroleum Program Strategy Screening Criteria levels, the EPA will be notified, excavation will stop, and characterization samples of the excavated segregated material will be collected as per Section I5.3 (Box 7A, Flowchart I-3).

If, however, the concentrations of remaining COPCs are above the ROD remedial goals or Tier I Petroleum Program Strategy Screening Criteria levels, the Oversight Agencies will be notified and either excavation and segregation of the affected material will continue, or a new CERCLA action may be necessary. Owner will prepare a technical memorandum and recommendation for Oversight Agency review and determination.

3.2 Encountered Groundwater

If groundwater is encountered, a grab groundwater sample will be collected. The collected grab groundwater sample will be analyzed for the presence of the following constituents, as applicable, and

based on initial characterization results of the contents of the removed object and/or encountered stand-alone affected material:

- VOCs (including MTBE);
- SVOCs;
- CAM 17 Metals;
- PCBs;
- Pesticides;
- TPH-GRO;
- TPH-DRO; and,
- TPH-MORO.

If COPCs concentrations in the collected grab groundwater sample exceed the applicable ROD remediation goal levels for groundwater presented in Tables I-3 and I-4 and/or TPH Groundwater Screening Criteria levels in Table I-1 (if applicable), FFA Signatories will be notified and will determine if a new CERCLA action or CAP is required. If VOCs and/or PAHs exceed the ROD remediation goals for groundwater, collection of soil vapor samples may be appropriate and/or desired. The results of the soil vapor sample analysis will then be compared to the Parcel B and G Soil Gas Action Levels (SGALs) established for the Site. If the concentrations of COPCs in the grab groundwater sample do not exceed the appropriate ROD groundwater remediation goals, SGALs (if soil vapor samples were collected), or TPH Groundwater Screening Criteria levels, work will proceed under the guidance of the RMP and the EPA will be notified.

3.3 Segregated Material Characterization

Segregated material (e.g., soil) will be sampled for characterization purposes. Composite sampling of the segregated material will not be allowed and the number of discrete segregated material samples collected for characterization will be as follows (DTSC, 2001):

Volume of Segregated Material	Samples per Volume
Up to 1,000 cubic yards	1 discrete sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 discrete samples for first 1,000 cubic yards + 1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 discrete samples for first 5,000 cubic yards + 1 discrete sample per additional 1,000 cubic yards

DTSC Information Advisory, Clean Imported Fill Material, October 2001.

Samples will be analyzed for the following constituents, as applicable, and based on the initial characterization analytical results collected when the affected material was first encountered:

- VOCs, (including MTBE);
- SVOCs;
- CAM 17 Metals;
- PCBs;
- Pesticides;
- TPH-GRO;
- TPH-DRO; and,
- TPH-MORO.

Sample results will be compared to the applicable ROD remediation goals for soil (Tables I-2 and I-4) and Tier I Petroleum Program Strategy Screening Criteria levels for shallow soil (Table I-1). If COPC concentrations are below the appropriate ROD remedial goals and Tier I Petroleum Program Strategy Screening Criteria levels (if applicable), the Regulatory Agencies will be notified and a Closure Report will be prepared and submitted for EPA review and approval and additional work will proceed under the guidance of the RMP. The segregated material will be used as fill material that will be placed under the durable cover that constitutes part of the final remedy. For segregated material with COPCs

concentrations exceeding ROD remediation goals for soil, the FFA Signatories will be consulted to determine if on-site treatment of CERCLA contaminated soils via a “presumptive remedy” is viable. If on-site treatment of contaminated soil is approved by the FFA Signatories, the soil will be treated and re-sampled until CERCLA chemical concentrations are below the ROD remediation goals. Once ROD remediation goals have been met, the treated soil may be used as fill material and placed under the durable cover. A Closure Report will be prepared and submitted to the FFA Signatories for review and approval and additional work will proceed under the guidance of the RMP.

If on-site treatment is not approved by the FFA Signatories, Owner will prepare an off-site disposal plan for FFA Signatory review and approval, will dispose of the soil accordingly, and prepare a closure report.

4.0 REFERENCES

- ChaduxTt, A Joint Venture of St George Chadux Corp. and Tetra Tech EM Inc. (ChaduxTt), 2009. *Final Amended Parcel B Record of Decision, Hunters Point Shipyard, San Francisco, California*. January 14.
- City and County of San Francisco (City), 2010. *CP/HPS Phase II Project Mitigation Monitoring and Reporting Program (Planning Department Case No. 2008.9946E)*. July.
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- _____, 2010. *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) for Installation Restoration Sites 07 and 18 at Parcel B: Soil Hotspot Locations at Parcels B, D-1, and G; and Soil Stockpiles at Parcels D-1 and G, Hunters Point Shipyard, San Francisco, California*. July.
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- Innovative Technical Solutions, Inc. (ITSI), 2009. *Final Project Work Plan Petroleum Hydrocarbon Corrective Action Parcel B, Hunters Point Shipyard, San Francisco, California*. June.
- Shaw Environmental Inc. (Shaw), 2007. *Final New Preliminary Screening Criteria and Petroleum Program Strategy, Hunters Point Shipyard, San Francisco, California*. December 21.

FLOWCHARTS

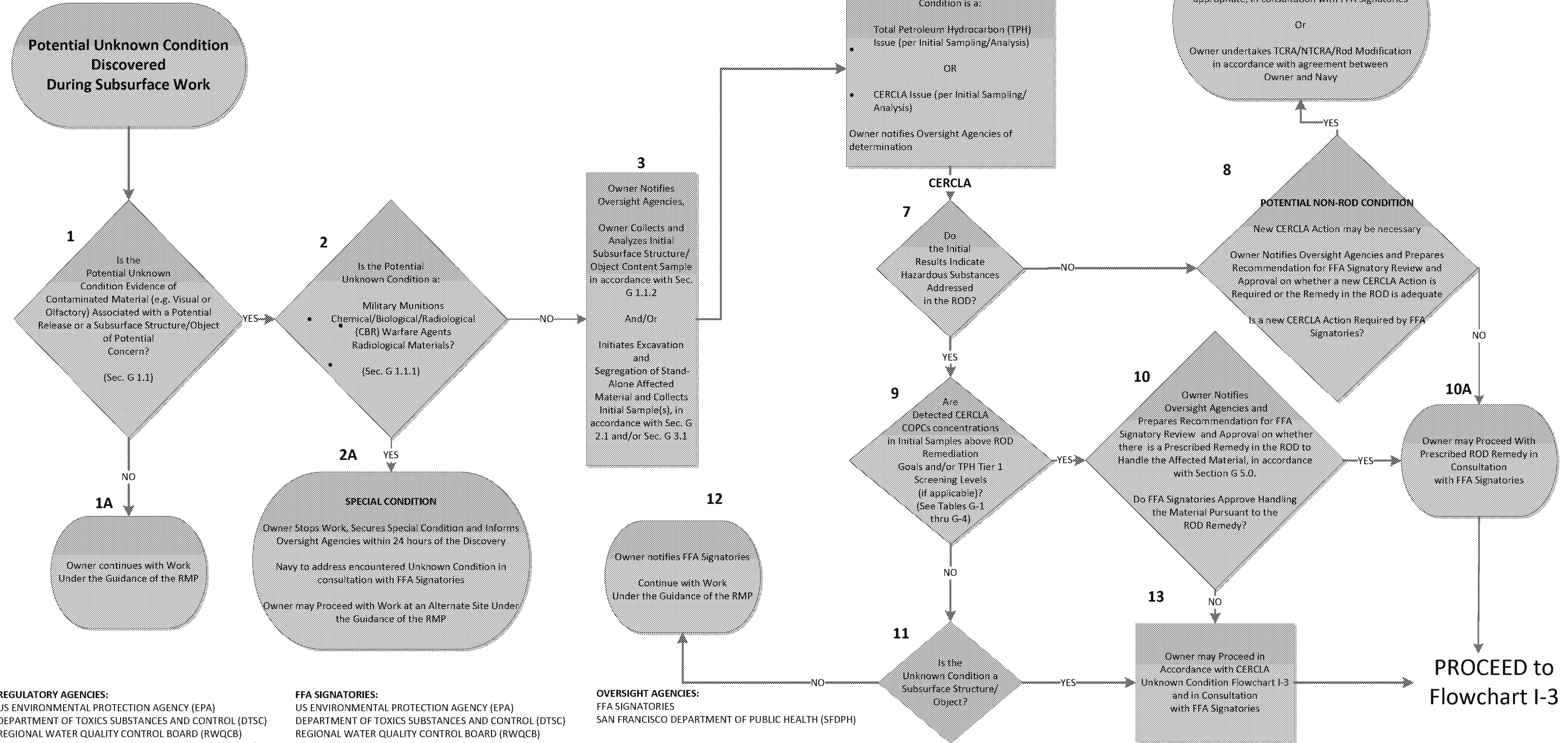
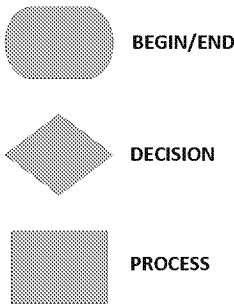
DRAFT Flowchart I-1

Unknown Condition Flowchart

(Main Flowchart)

This Flowchart presents a process and protocols that can be used in addressing unexpected or unknown conditions, should any such conditions be discovered in the course of performing work. Nothing in this flowchart or in the RMP should be construed to waive or limit the rights of the parties under applicable law, including but not limited to the Owner's and the Navy's rights, obligations, and defenses under the CERCLA 120(h) covenants in the deed, and under the section 330 indemnity.

LEGEND



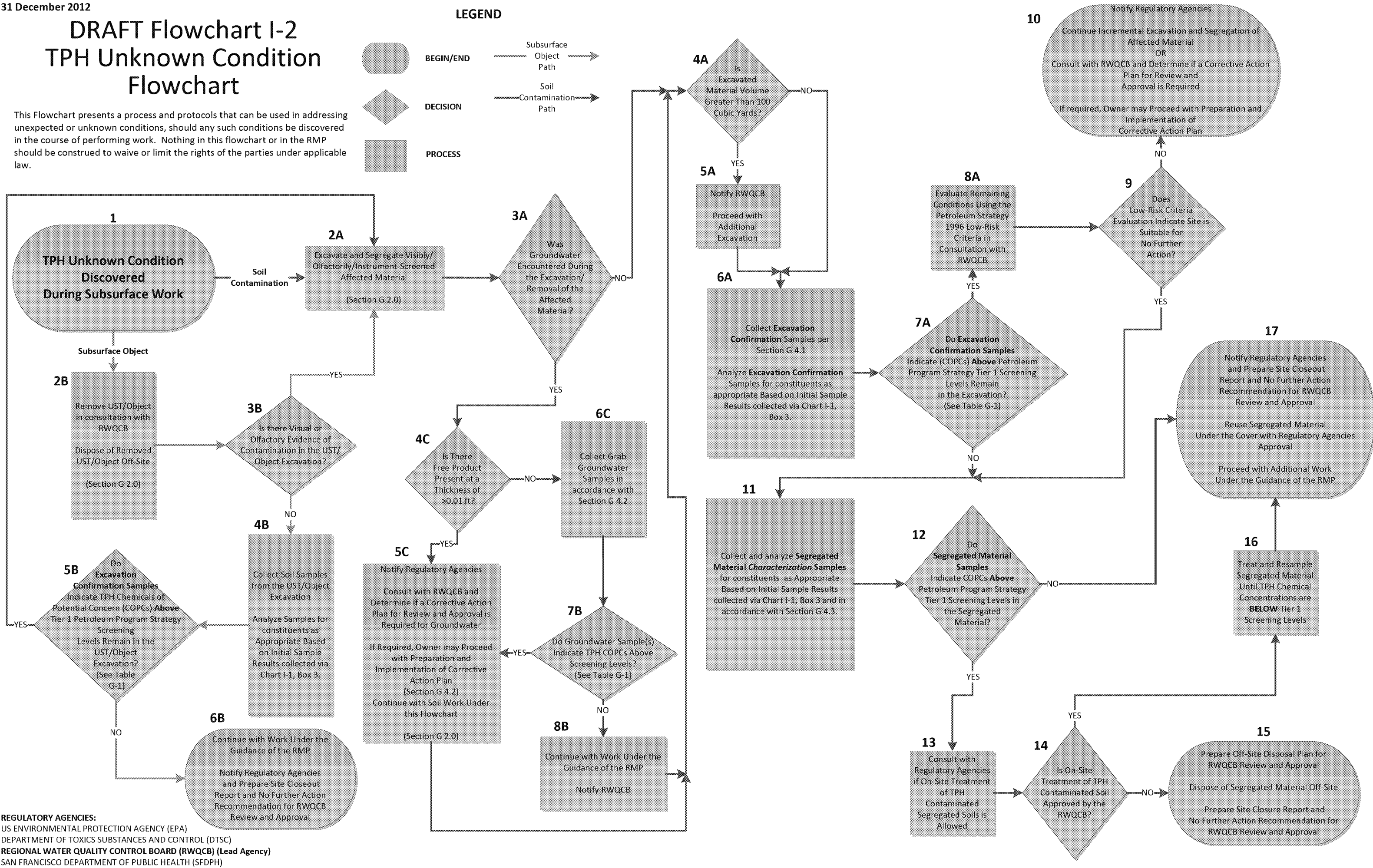
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US ENVIRONMENTAL PROTECTION AGENCY (EPA)
DEPARTMENT OF TOXICS SUBSTANCES AND CONTROL (DTSC)
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH (SFDPH)

FFA SIGNATORIES:
US ENVIRONMENTAL PROTECTION AGENCY (EPA)
DEPARTMENT OF TOXICS SUBSTANCES AND CONTROL (DTSC)
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)
US DEPARTMENT OF THE NAVY (NAVY)

OVERSIGHT AGENCIES:
FFA SIGNATORIES
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH (SFDPH)

DRAFT Flowchart I-2 TPH Unknown Condition Flowchart

This Flowchart presents a process and protocols that can be used in addressing unexpected or unknown conditions, should any such conditions be discovered in the course of performing work. Nothing in this flowchart or in the RMP should be construed to waive or limit the rights of the parties under applicable law.

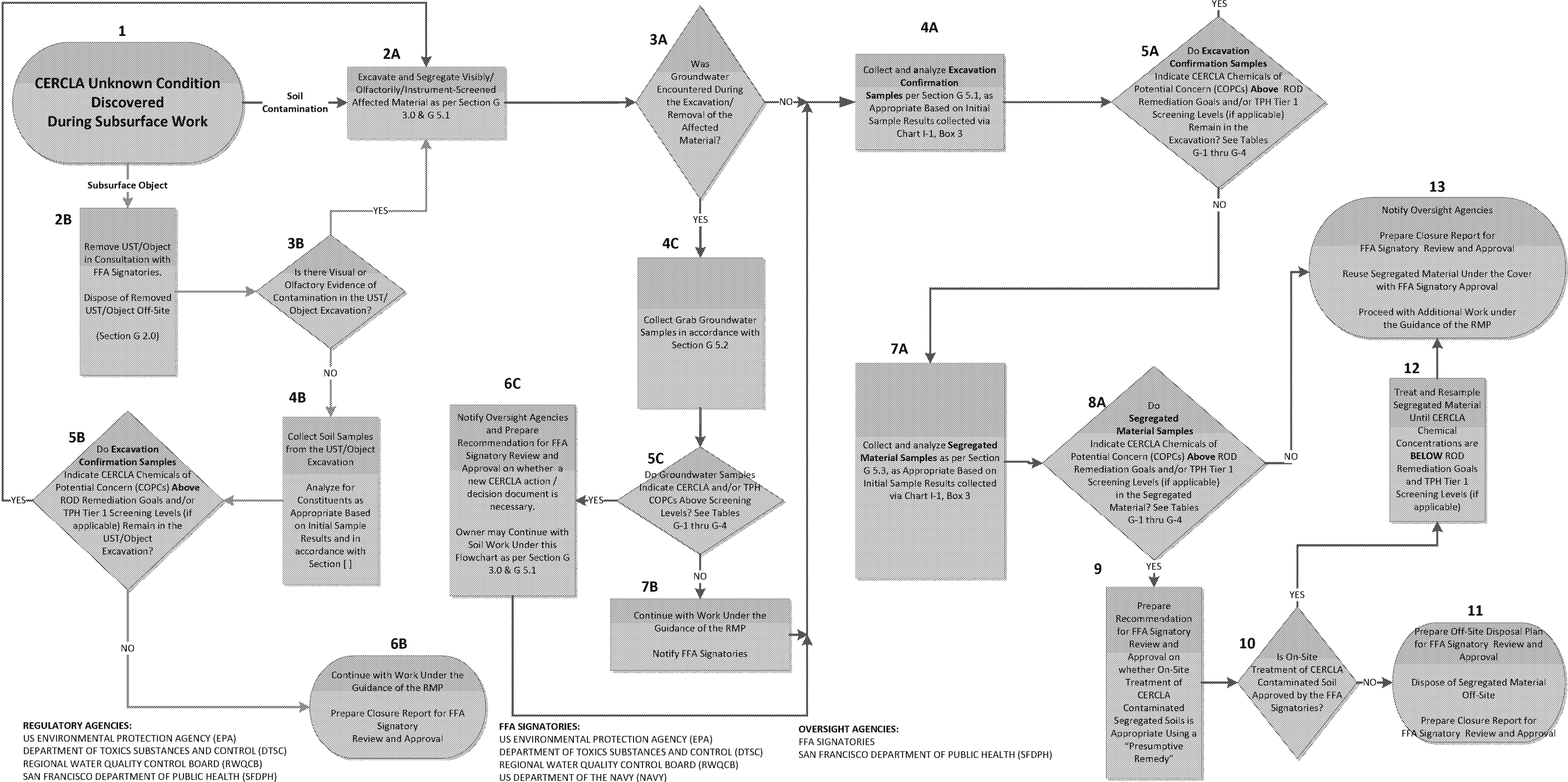
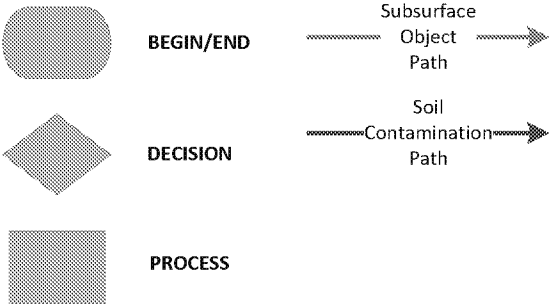


REGULATORY AGENCIES:
US ENVIRONMENTAL PROTECTION AGENCY (EPA)
DEPARTMENT OF TOXICS SUBSTANCES AND CONTROL (DTSC)
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) (Lead Agency)
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH (SFPDH)

DRAFT Flowchart I-3 CERCLA Unknown Condition Flowchart

This Flowchart presents a process and protocols that can be used in addressing unexpected or unknown conditions, should any such conditions be discovered in the course of performing work. Nothing in this flowchart or in the RMP should be construed to waive or limit the rights of the parties under applicable law, including but not limited to the Owner's and the Navy's rights, obligations, and defenses under the CERCLA 120(h) covenants in the deed, and under the section 330 indemnity.

LEGEND



REGULATORY AGENCIES:
US ENVIRONMENTAL PROTECTION AGENCY (EPA)
DEPARTMENT OF TOXICS SUBSTANCES AND CONTROL (DTSC)
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH (SFDPH)

FFA SIGNATORIES:
US ENVIRONMENTAL PROTECTION AGENCY (EPA)
DEPARTMENT OF TOXICS SUBSTANCES AND CONTROL (DTSC)
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)
US DEPARTMENT OF THE NAVY (NAVY)

OVERSIGHT AGENCIES:
FFA SIGNATORIES
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH (SFDPH)

TABLES

TABLE I-1: PETROLEUM HYDROCARBON SCREENING CRITERIA (Shaw, 2007)

Tier 1 Screening Criteria for Petroleum Hydrocarbons and Related Constituents in Shallow Soil and Groundwater at Hunters Point Shipyard

Chemical of Potential Concern	Shallow Soil (< 10 ft bgs)				Groundwater/Deep Soil (> 10 ft bgs)			
	Tier 1 Screening Criteria (mg/kg)				Tier 1 Screening Criteria (µg/L)			
	Residential Reuse		Non-Residential Reuse		Residential Reuse		Non-Residential Reuse	
	Non-Drinking Water Resources	Drinking Water Resource ²	Non-Drinking Water Resources	Drinking Water Resource ²	Non-Drinking Water Resources	Drinking Water Resource ²	Non-Drinking Water Resources	Drinking Water Resource ²
Total Petroleum Hydrocarbons								
Gasoline-Range TPH	315	35	315	35	na	42	na	42
Diesel-Range TPH	1,500	35	1,500	35	na	42	na	42
Motor Oil-Range TPH	1,850	1,850	1,850	1,850	na	42	na	42
Total TPH	na	na	na	na	1,400 ¹	na	1,400 ¹	na
Volatile Organic Compounds								
Benzene	0.12	0.0049	0.26	0.0049	477	0.11	700	0.11
Ethylbenzene	9.4	9.4	9.4	9.4	86	86	86	86
Methyl tert-butyl ether (MTBE)	29	0.046	37	0.046	8,000	10	8,000	10
Toluene	63	10	210	10	5,000	144	5,000	144
Total Xylenes	31	4.8	100	4.8	91,700	42	161,000	42
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	520	60	580	60	710	74	710	74
Acenaphthylene	25	25	25	25	60	60	60	60
Anthracene	230	230	230	230	43	43	43	43
Benzo(a)anthracene	0.38	0.38	1.3	1.3	60	0.055	60	0.055
Benzo(b)fluoranthene	0.38	0.38	1.3	1.3	50	0.056	60	0.056
Benzo(k)fluoranthene	0.38	0.38	1.3	1.3	60	0.056	60	0.056
Benzo(g,b,i)perylene	340	340	3,300	3,300	60	36	60	36
Benzo(a)pyrene	0.038	0.038	6.13	0.13	60	0.0055	60	0.0055
Chrysene	62	14	210	14	60	0.21	60	0.21
Dibenzo(a,h)anthracene	0.062	0.062	0.21	0.21	60	0.0092	60	0.0092
Fluoranthene	100	100	100	100	16	16	16	16
Fluorene	140	110	140	140	60	48	60	48
Indeno(1,2,3-cd)pyrene	0.62	0.62	2.1	2.1	60	0.055	60	0.055
Methylnaphthalene (total 1- & 2-)	49	0.58	490	0.58	26,000	4.8	26,000	4.8
Naphthalene	1.3	0.019	2.8	0.019	470	0.093	470	0.093
Phenanthrene	140	140	140	140	60	60	60	60
Pyrene	730	630	1,040	630	60	36	60	36

Notes: mg/kg = milligrams per kilogram

µg/L = micrograms per liter

na = not applicable

¹ The Total TPH screening criterion of 1,400 µg/L is for the protection of ecological receptors AT THE BAY MARGIN and was developed for and used at former Naval Station Treasure Island in San Francisco, CA. A range of applicable criteria for Total TPH, Benzene and MTBE based on fate and transport modeling was developed for use at former Naval Air Station Alameda Point in Alameda, CA. The applicable criteria vary as a function of distance from the shoreline (*See inset table below).

² Not Applicable where groundwater use is deed restricted

*Groundwater Screening Criteria for TTPH, Benzene, and MTBE with Distance From the Bay Margin:

Distance (feet)	Benzene (µg/L)	MTBE (µg/L)	TTPH (µg/L)
0	700	8,000	1,400
25	733	8,380	1,467
50	1,046	11,953	2,092
75	1,608	18,377	3,216
100	2,420	27,653	4,839
125	3,475	39,711	6,949
150	4,769	54,508	9,539
175	6,302	72,025	12,604
200	8,072	92,255	16,145
225	10,079	115,192	20,000**
250	12,323	140,833	20,000**

**Source Criteria for TTPH:

Shallow Soil (less than 10 ft bgs)	Groundwater/Deep Soil (greater than 10 ft bgs)
3,500 mg/kg	20,000 µg/L

Shaw Environmental Inc. (Shaw), 2007. *Final New Preliminary Screening Criteria and Petroleum Program Strategy, Hunters Point Shipyard, San Francisco, California.* December 21.

TABLE I-2: REMEDIATION GOALS FOR SOIL (*ChaduxTt*, 2009)

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Exposure Scenario	Chemical of Concern	Remediation Goal (mg/kg)	Basis for Goal
Residential	Antimony	10	RBC
	Aroclor-1254	0.093	RBC
	Aroclor-1260	0.21	RBC
	Arsenic	11.1	HPAL
	Benzo(a)anthracene	0.37	RBC
	Benzo(a)Pyrene	0.33	PQL
	Benzo(b)fluoranthene	0.34	RBC
	Benzo(k)fluoranthene	0.34	RBC
	Beta-BHC	0.0066	RBC
	Bis(2 ethylhexyl)phthalate	1.1	RBC
	Cadmium	3.5	RBC
	Copper	159	RBC
	Dibenz(a,h)anthracene	0.33	PQL
	Dieldrin	0.0034	PQL
	Heptachlor epoxide	0.0017	PQL
	Indeno(1,2,3-cd)pyrene	0.35	RBC
	Iron	58,000	HPAL
	Lead	155	RBC
	Manganese	1,431	HPAL
	Mercury	2.3	HPAL
	Naphthalene	1.7	RBC
	Tetrachloroethene	0.48	RBC
	Trichloroethene	2.9	RBC
	Vanadium	117	HPAL
	Zinc	373	RBC
Recreational	Aroclor-1254	0.74	RBC
	Aroclor-1260	0.74	RBC
	Arsenic	11.1	HPAL
	Benzo(a)pyrene	0.33	PQL
	Lead	155	RBC
Industrial	Arsenic	11.1	HPAL
	Benzo(a)anthracene	1.8	RBC
	Benzo(a)Pyrene	0.33	PQL
Construction Worker	Aroclor-1260	2.1	RBC
	Arsenic	11.1	HPAL
	Benzo(a)pyrene	0.65	RBC
	Lead	800	RBC
	Trichloroethene	151	RBC

Notes:

Exposures in the residential, industrial, and construction worker scenarios consider exposure to soil from 0 to 10 feet below ground surface. The recreational exposure scenario considers exposure to soil from 0 to 2 feet below ground surface.

HPAL Hunters Point ambient level

PQL Practical quantitation limit

mg/kg Milligram per kilogram

RBC Risk-based concentration

ChaduxTt, A Joint Venture of St George Chadux Corp. and Tetra Tech EM Inc. (ChaduxTt), 2009. *Final Amended Parcel B Record of Decision, Hunters Point Shipyard, San Francisco, California*. January 14.

TABLE I-3: REMEDIATION GOALS FOR GROUNDWATER (*ChaduxTt, 2009*)

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Exposure Scenario	Chemical of Concern	Remediation Goal (µg/L)	Basis for Goal
A-Aquifer Groundwater			
Residential Vapor	1,2,4-Trichlorobenzene	66	RBC
	1,2,4-Trimethylbenzene	25	RBC
	1,2-Dichlorobenzene	2,561	RBC
	1,2-Dichloroethane	2.3	RBC
	1,2-Dichloroethene (total)	209	RBC
	1,2-Dichloropropane	1.1	RBC
	1,3,5-Trimethylbenzene	19	RBC
	1,4-Dichlorobenzene	2.1	RBC
	2-Methylnaphthalene	707	RBC
	Benzene	0.5	PQL
	Bromodichloromethane	1	RBC
	Chlorobenzene	392	RBC
	Chloroethane	6.5	RBC
	Chloroform	1.0	PQL
	cis-1,2-Dichloroethene	209	RBC
	Dichlorodifluoromethane	14	RBC
	Mercury	0.68	RBC
	Methylene chloride	27	RBC
	Naphthalene	3.6	RBC
	Tetrachloroethene	1	PQL
	trans-1,2-Dichloroethene	182	RBC
	Trichloroethene	2.9	RBC
	Trichlorofluoromethane	176	RBC
	Vinyl chloride	0.5	PQL
Industrial Vapor Intrusion	Chloroform	1.2	RBC
Construction Worker Trench Exposure	1,2,4-Trichlorobenzene	55	RBC
	1,2,4-Trimethylbenzene	72	RBC
	1,2-Dichlorobenzene	2,215	RBC
	1,2-Dichloroethane	30	RBC
	1,2-Dichloroethene (total)	363	RBC
	1,2-Dichloropropane	40	RBC
	1,4-Dichlorobenzene	68	RBC
	2,4,6-Trichlorophenol	15	RBC
	2,4-Dimethylphenol	9,801	RBC
	2,4-Dinitrotoluene	179	RBC
	2-Methylnaphthalene	140	RBC
	4-Methylphenol	3,500	RBC

TABLE I-3: REMEDIATION GOALS FOR GROUNDWATER (CONTINUED)

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Exposure Scenario	Chemical of Concern	Remediation Goal (µg/L)	Basis for Goal
A-Aquifer Groundwater (Continued)			
Construction Worker Trench Exposure (Continued)	Arsenic	40	RBC
	Benzene	22	RBC
	Benzo(a)anthracene	2	PQL
	Benzo(a)pyrene	2	PQL
	Bromodichloromethane	26	RBC
	Chlorobenzene	594	RBC
	Chloroform	36	RBC
	Chrysene	6.4	RBC
	cis-1,2-Dichloroethene	363	RBC
	Mercury	4.68	RBC
	Naphthalene	20	RBC
	Pentachlorophenol	25	PQL
	Tetrachloroethene	19	RBC
	trans-1,2-Dichloroethene	721	RBC
	Trichloroethene	374	RBC
	Vinyl chloride	7.2	RBC
B-Aquifer Groundwater			
Residential Domestic Use	1,4-Dichlorobenzene	7.5	ARAR
	Antimony	43.26	HGAL
	Arsenic	27.34	HGAL
	Benzene	5	ARAR
	Chloroethane	4.6	RBC
	Manganese	8,140	HGAL
	Pentachlorophenol	25	PQL
	Thallium	12.9 7	HGAL
	Trichloroethene	5	ARAR

Notes:

Remediation goals for VOCs to address exposure via indoor inhalation of vapors may be superseded based on COC identification information from soil gas surveys that may be conducted in the future. These future action levels would be established for soil gas, would account for vapors from both soil and groundwater, and would be calculated based on a cumulative risk level of 10^{-6} using the accepted methodology for risk assessments at HPS.

µg/L Micrograms per liter
 ARAR Applicable or relevant and appropriate requirement
 HGAL Hunters Point groundwater ambient level
 PQL Practical quantitation limit
 RBC Risk-based concentration

ChaduxTt, A Joint Venture of St George Chadux Corp. and Tetra Tech EM Inc. (ChaduxTt), 2009. *Final Amended Parcel B Record of Decision, Hunters Point Shipyard, San Francisco, California.* January 14.

Table I-4. Remediation Goals for Soil and Groundwater (Navy, 2009)

Parcel G Record of Decision, Hunters Point Shipyard, San Francisco, California

Exposure Scenario	Chemical of Concern	Remediation Goal / Basis
Soil (mg/kg)		
Residential	Manganese	1,431 / HPAL
Recreational	Arsenic	11.1 / HPAL
	Benzo(a)pyrene	0.33 / RBC
Industrial	Arsenic	11.1 / HPAL
	Benzo(a)pyrene	0.33 / PQL
	Benzo(b)fluoranthene	1.76 / RBC
	Lead	800 / RBC
Construction Worker	Arsenic	11.1 / HPAL
	Benzo(a)pyrene	0.65 / RBC
	Lead	800 / RBC
	Manganese	6,889 / RBC
Groundwater (µg/L)		
Residential – Vapor Intrusion	Chloroform	1.0 / PQL
	Methylene Chloride	27 / RBC
	Trichloroethene	2.9 / RBC
Industrial – Vapor Intrusion	Benzene	0.63 / RBC
	Carbon Tetrachloride	0.50 / PQL
	Chloroform	1.2 / RBC
	Naphthalene	6.0 / RBC
	Tetrachloroethene	1.0 / PQL
	Trichloroethene	4.8 / RBC
	Xylene (total)	337 / RBC
Construction Worker – Trench Exposure	Arsenic	40 / RBC
	Benzene	17 / RBC
	Naphthalene	17 / RBC
	Tetrachloroethene	18 / RBC
	Xylene (total)	861 / RBC

Notes:

Soil remediation goals are in milligrams per kilogram (mg/kg).

Groundwater remediation goals are in micrograms per liter (µg/L).

Exposures in the residential, industrial, and construction worker scenarios consider exposure to soil from 0 to 10 feet below ground surface. The recreational exposure scenario considers exposure to soil from 0 to 2 feet below ground surface.

Remediation goals for volatile organic compounds to address exposure via indoor inhalation of vapors may be superseded based on chemicals of concern identification information from soil gas surveys that may be conducted in the future. These future action levels would be established for soil gas, would account for vapors from both soil and groundwater, and would be calculated based on a cumulative risk level of 10^{-6} using the accepted methodology for risk assessments at the Hunters Point Shipyard.

HPAL Hunters Point ambient level PQL Practical quantitation limit RBC Risk-based concentration

Department of the Navy (Navy), 2009. *Final Record of Decision for Parcel G, Hunters Point Shipyard, San Francisco, California*. February 18.